DOCUMENT RESUME

ED 059 764 PS 005 373

AUTHOR Roderick, Jessie A.; Moyer, Joan
TITLE Nonverbal Behavior of Young Children as It Relates to Their Decision Making: A Report of Research Findings.
INSTITUTION Maryland Univ., College Park. Coll. of Education.
PUB DATE Sep 71
NOTE 152p.; University Nursery-Kindergarten Monograph 5

EDRS PRICE MF-$0.65 HC-$6.58
DESCRIPTORS Age Differences; *Behavioral Science Research; *Child Development; Classification; *Decision Making; Human Posture; Interaction; Nonverbal Communication; Objectives; Observation; Pilot Projects; Play; *Preschool Children; Rating Scales; Sex Differences; Task Performance

ABSTRACT

Nonverbal behaviors in young children, including facial expressions, gesture, and body movement, were studied. Decision-making behaviors were viewed on a less intentional-intentional continuum ranging from beginning or pre-decision behavior which suggested little or no intent to middle or exploratory behaviors indicative of more intent to end behaviors which denoted strong intent or a child's absorption in or completion of a task. Subjects were University Nursery-Kindergarten children who were representative of each of the three age groups and were equally representative of both sexes. A Pilot and a Principal Study were conducted. An initial step in the Pilot Study was the development of the Pupil Nonverbal Category System. All observations were made during a free play period. The following were noted: (1) the nonverbal behaviors exhibited, (2) the nature of any personal interaction, and (3) task completion or the ability to stay with a task for at least five minutes. The occurrence of nonverbal behaviors and the relationship of these behaviors to decision making and to interactions with other persons were analyzed and reported in terms of mean frequencies, percentages, and rankings. It was found that: (1) Frequency of behaviors varied with age and sex; (2) With respect to nonverbal behaviors, the majority of beginning points were observed in the Task Oriented category; the majority of middle points in Focusing Seeking; and the majority of end points in Withdraw. It is recommended that more than one observer should study a child and nonverbal behaviors be recorded separate from decision-making behaviors. (Author/CK)

ED 059764

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

PS 005373

ABSTRACT

NONVERBAL BEHAVIOR OF YOUNG CHILDREN AS IT RELATES TO THEIR DECISION MAKING:

A Report of Research Findings

September 1970-1971

Since the purpose of education is to enhance the person, it would appear that the first and foremost prerequisite for any educational practice is a scrutinizing look at the person for whom education is intended. One way of studying the person is to examine his communication processes. The major purpose of this study was to examine the nonverbal behavior of young children in relationship to the decision making process. A critical aspect of the study was the development of the Nonverbal Behavior Category System.

The nonverbal behaviors examined in this study were facial expressions, gesture, and body movement.

Decision-making behaviors as used in this study were viewed on a less intentional-intentional continuum ranging from beginning or pre-decision behaviors which suggested little or no intent to middle or exploratory behaviors indicative of more intent to end behaviors which denoted strong intent or a child's absorption in or completion of a task.

Design

Subjects

Subjects were University Nursery-Kindergarten children who were chosen to satisfy the following criteria: a representative sample from each of the three age groups, and a comparable number of boys and girls. There were 10 subjects in the Pilot Study and 21 in the Principal Study.

Five East-Indian children were included in the Principal Study sample to facilitate cross-cultural comparisons of the behaviors examined. The same classrooms were used in both studies. Because of the span of time between data collection, children's ages changed. Thus, the three-year-olds in the Pilot Study were four-year-olds in the Principal Study. The same applied for the other two age groups considered.

Procedures

An initial step in the Pilot Study was the development of the Pupil Nonverbal Category System. To facilitate this, observers, who were graduate students in the College of Education, recorded in diary fashion all behaviors their subjects exhibited, with special attention to nonverbal behaviors. The resulting case studies were subjected to content analysis and a category system developed. Succeeding data collection procedures utilizing the Pupil Nonverbal Category System were similar for both the Pilot and Principal Studies. All observations were made during the free play period. Observers noted the following for each subject: (1) The nonverbal behaviors exhibited, (2) the nature of any personal interaction, and (3) task completion or the ability to stay with a task for at least five minutes . In addition, observers noted on the tally sheet the passage of a designated time unit and the relationship of the nonverbal behavior to the decision-making process.

Procedures for training the observers for both studies consisted of teaching them the Pupil Nonverbal Category System and providing them with opportunities to practice using the system with specially prepared videotapes. Training sessions were revised in several respects for the Principal Study. Reliability between observers was calculated using Scott's phi-coefficient.

Analysis of Data

The occurrence of nonverbal behaviors and the relationship of these behaviors to decision making and to interactions with other persons were analyzed and reported in terms of mean frequencies, percentages, and rankings. In addition, data were examined according to age and sex of subjects. In the Principal Study, the occurrence of nonverbal behavior categories was also analyzed in terms of average percentages according to age and sex using COSAN (Classroom Observation System Analysis), a general program for the compilation of data from classroom observation systems.

Selected Research Questions and Pertinent Findings

Certain of the research questions and the more pertinent findings of the Pilot and Principal Studies follow.

1. What is the frequency with which nonverbal behaviors occur during free play?

Frequency of behaviors varied with age and sex. Focusing Seeking and Feeling Expression Behavior categories were the most frequently observed and Pause, Initiating Negative, and Response Negative the most infrequent. As a group, the subjects interacted more with peers than with teachers, but sex and age differences were evident when findings of the Pilot and Principal Studies were compared.

2. What nonverbal behaviors are associated with the beginning, middle, and end of the decision-making continuum?

Common to the findings of the Pilot and Principal Studies were the following relationships of nonverbal categories to points on the decision-making continuum: the majority of beginning points were observed in the Task Oriented category; the majority of middle points

in Focusing Seeking; and the majority of end points in Withdraw.

3. What sex and age differences are evident in nonverbal behaviors associated with the beginning, middle, and end of the decision-making continuum?

In the Pilot Study, girls engaged in more decision-making activities than boys, but the reverse was true in the Principal Study. Age differences were also apparent with four-year-olds exhibiting the largest number of decision-making behaviors in the Pilot and five-year-olds in the Principal Study.

4. What personal interactions by sex and age are evident at the beginning, middle, and end of the decision-making continuum?

Data from both studies revealed that more decisions were made alone than in interaction with another person. In the Principal Study, interaction with another person seemed to occur more at the middle point of the decision-making continuum than at either the beginning or end points.

Recommendations and Implications

The implications of the study were derived from a number of sources. Among them were brainstorming sessions conducted with graduate students during the year the study was conducted. Another source was the analysis of the data. Recommendations were made by the observers for the improvement of procedures. Among the recommendations were:

1. More than one observer should study a child. One procedure would be to have one person utilize the Nonverbal Behavior Category System while a second observer keeps a case record.

2. Record nonverbal behaviors separate from, but simultaneously with decision-making behaviors. This would necessitate one additional observer. Attempt to get at smaller decisions within a larger decision.

3. Break down the Focusing Seeking category into two separate categories.

Implications of the study were discussed in two major categories: curriculum development and teacher education. Within each of these broad categories decision making, free play, nonverbal communication, and cross-cultural dimensions were briefly discussed.

Among the implications for curriculum development were the following:

1. Attempt to conceptualize in a more adequate way the decision-making process and investigate further the rudiments of decision in young children.

2. Examine aspects of classroom management if decision making is to be a critical element of the curriculum.

3. Insure that teachers allow both for "opening up" and consolidating experiences during free play.

4. Examine carefully certain of the categories in the Nonverbal Behavior Category System. For example, consider how the category Feeling Expression can be expanded to give teachers the kind of information they need. Examine why the category Pause had so few tallies. Investigate ways in which to get fuller information while tallying the category Task Orientation. Attempt to account for the relatively few times. Initiating Behavior Negative and Initiating Behavior Positive were tallied.

5. Develop modes of learning nonverbal behavior cues from persons of other cultures in order to facilitate the communication process.

Among the implications for teacher education were the following:

1. Teachers should learn to read the nonverbal cues of children so that teachers can develop a repertoire of appropriate responses.

2. Teachers-to-be should have the opportunity to learn the decision-making process by having some major responsibilities in planning and implementing their programs of teacher education.

3. Teachers should be give opportunities to utilize instruments such as the Nonverbal Behavior Category System.

4. Teacher education programs should provide opportunities for teachers to become environment establishers, facilitators, and organizers rather than only dispensers of knowledge.

The study was concluded with a statement that the search need to continue to find more adequate ways to assist the young to observe more carefully, think more fully, feel more deeply--and decide more thoughtfully.

UNIVERSITY NURSERY-KINDERGARTEN

MONOGRAPH SERIES

The University Nursery-Kindergarten Monograph Series is an effort to share research findings and curricular ideas of persons working in or with the Nursery-Kindergarten, a knowledge production unit of the University of Maryland.

Other titles in the series include:

One: Toward New Programs for Young Children, the Staff

Two: Decision Making in Young Children: A Report of Research Findings, Part One, Sandra Horowitz

Three: Decision Making in Young Children: A Report of Research Findings, Part Two, Joan Poultney

Four: Creating a "Loving" Environment for Young Children, Marion Lawrence Leiserson

Series Editor: Louise M. Berman
Professor and Director

Available from the University Bookstore

NONVERBAL BEHAVIOR OF YOUNG CHILDREN AS IT RELATES TO THEIR DECISION MAKING:

A Report of Research Findings

University Nursery-Kindergarten
Monograph 5

Prepared by
Jessie A. Roderick, Associate Professor,
Principal Investigator
Joan Moyer, Associate Professor
Ruth Spodak, Graduate Assistant

Edited by
Louise M. Berman
Professor

PS 003693

College of Education
University of Maryland
College Park
1971

TABLE OF CONTENTS

		Page
EDITOR'S PREFACE		vi
LIST OF TABLES		xi
Chapter		
ONE	NONVERBAL BEHAVIOR AS A MEANS OF EXPLORING CHILDREN'S DECISION MAKING	1
	Nonverbal Behavior: A Critical Aspect of Communication	1
	Decision Making: An Earlier Research Emphasis	3
	Basic Assumptions and Definitions	4
	Research Questions	7
	Guide to the Reader	7
	ANNOTATED BIBLIOGRAPHY	9
TWO	THE DEVELOPMENT OF A CATEGORY SYSTEM TO STUDY NONVERBAL BEHAVIOR	15
	Rationale for Category System	15
	Description of the Pupil Nonverbal Category System	16
	Category Descriptions and Illustrative Behaviors	18
	Pupil Nonverbal Behavior Category System .	22
THREE	PROCEDURES UTILIZED IN STUDYING CHILDREN'S NONVERBAL BEHAVIOR	29
	Procedures Used in Pilot Study	29
	Method of Observation	30

Table of Contents, continued

Chapter		Page
	Procedures for Principal Study	33
	Data Collection	33
	Subjects	33
	Observers	34
FOUR	FINDINGS OF PILOT PROJECT	35
	Establishing Reliability Among Observers Utilizing the Pupil Nonverbal Behavior Category System	35
	What is the Frequency with which Various Nonverbal Behaviors Occur During Free Play?.	36
	Relation to Age and Sex	36
	Relation of Nonverbal Behavior to Personal Interactions	41
	What Clusters of Nonverbal Behavior Occur? .	45
	What Nonverbal Behaviors are Associated with the Beginning, Middle, and End of the Decision-Making Continuum?	46
	Category Frequency	46
	What Sex and Age Differences are Evident in Nonverbal Behaviors Associated with the Beginning, Middle, and End of the Decision-Making Continuum?	50
	What Personal Interactions by Sex and Age are Evident at the Beginning, Middle, and End of the Decision-Making Continuum? . . .	50
	Summary	56

Table of Contents, continued

Chapter		Page
FIVE	FINDINGS OF THE PRINCIPAL STUDY	57
	Establishing Reliability Among Observers Utilizing the Pupil Nonverbal Behavior Category System	58
	What is the Frequency with which Various Nonverbal Behaviors Occur During Free Play? . .	59
	Frequency of Nonverbal Behaviors as Related to Age and Sex	59
	Frequency of Nonverbal Behaviors as Related to Personal Interactions	70
	What Nonverbal Behaviors are Associated with the Beginning, Middle, and End of the Decision-Making Continuum?	74
	Category Frequency	74
	What Personal Interactions by Sex and Age are Evident at the Beginning, Middle, and End of the Decision-Making Continuum?	79
	What Cross-cultural Differences Exist in Nonverbal and Decision-Making Behaviors? . . .	83
	What is the Frequency with which Various Nonverbal Behaviors Occur During Free Play? .	83
	Discussion of Data on the Indian Children with Comparable Data on the General Population	85
	Frequency of Nonverbal Behaviors as Related to Personal Interactions	85
	Discussion of Data on the Indian Children with Comparable Data on the General Population	87
	What Nonverbal Behaviors are Associated with the Beginning, Middle, and End of the Decision-Making Continuum?	87

Table of Contents, continued

Chapter		Page
	Discussion of Data on the Indian Children with Comparable Data on the General Population	87
	Summary	89
SIX	RECOMMENDATIONS AND IMPLICATIONS BASED ON FINDINGS AND OTHER ACTIVITIES ASSOCIATED WITH THE STUDY	90
	Recommendations for Improving Procedures in Future Research Studies	91
	Implications	93
	Curriculum Development	93
	Teacher Education	101
	So What?	106
APPENDICES:		
APPENDIX A:	DIRECTIONS FOR REVIEWING LITERATURE RELATED TO NONVERBAL BEHAVIOR AND DECISION MAKING	107
APPENDIX B:	NONVERBAL COMMUNICATION AND DECISION MAKING (TALLY SHEET FOR RECORDING NONVERBAL BEHAVIORS). .	112
APPENDIX C:	NONVERBAL BEHAVIOR OF YOUNG CHILDREN AND ITS RELATIONSHIP TO DECISION-MAKING BEHAVIOR	114
APPENDIX D:	NONVERBAL COMMUNICATION AND DECISION MAKING (REVISED TALLY SHEET FOR RECORDING NONVERBAL BEHAVIOR)	119
APPENDIX E:	RELATION OF NONVERBAL BEHAVIOR CATEGORIES TO DECISION-MAKING CONTINUUM BY FREQUENCY	121
APPENDIX F:	RELATION OF NONVERBAL BEHAVIOR CATEGORIES TO THE DECISION-MAKING CONTINUUM BASED ON PERCENTAGES AND FREQUENCIES	122
APPENDIX G:	BRAINSTORMING SESSIONS ACCOMPANYING STUDY ON NONVERBAL BEHAVIOR OF YOUNG CHILDREN AS IT RELATES TO THEIR DECISION MAKING: IMPLICATIONS FOR CURRICULUM DEVELOPMENT AND TEACHER EDUCATION . . .	123

EDITOR'S PREFACE

"I have never looked so closely at anyone in my life." Such was the comment of one of the researchers who assisted in gathering data for the project reported in the pages that follow.

Since the purpose of education is to enhance the person so that he can live in a manner satisfying to himself and others, it would appear that the first and foremost prerequisite for any educational practice would be a scrutinizing look at the person for whom education is intended. One way of studying the person is to examine his communication processes. An even closer look would focus sharply on his nonverbal behavior.

The examination of the nonverbal behavior of young children was the focus of this study. A major assumption underlying the study was that the child sends out cues which, if noted and observed by the teacher, might enable him to make better decisions about the optimal environment for the child to learn, think, interact, and care.

Another assumption underlying the study was that decision making is one of the most central processes of life. This process should, therefore, be studied and taught in a systematic way. Furthermore, behaviors related to decision making are observable, although at the present time, little research data exist to support this last statement.

A third assumption was that nonverbal behavior gives some insights into the decision making process. In brief, it was felt that by close observation of the child's nonverbal behavior, some sophisticated inferences could be made about the child in the process of decision.

One of the major contributions of this study was the development of a category system to describe nonverbal behavior of young children. The development of the system and descriptions of the categories are in Chapter Two. This study is released with the hope that other groups will assist in the exploration of man's nonverbal behavior as a source for developing more adequate school programs.

This monograph is one of a series produced by the University of Maryland Nursery-Kindergarten. The purposes of the monographs are threefold:

1. To provide a body of research data about the young child and teachers of young children.
2. To provide a body of knowledge relative to curriculum development in programs of early childhood education.
3. To provide new insights relative to the preparation of teachers of young children.

Monograph 5 is seen as contributing primarily to the first purpose although the reader may wish to add his own recommendations and implications to the last chapter which gives attention to curriculum development and teacher preparation. Earlier monographs include a statement of curricular directions for programs for young children. The focus is upon the development of such process skills as communicating, decision making, knowing, and creating. In addition, previous efforts include several studies which focus upon decision making.

The pages which follow could not have come about without the serious and dedicated efforts of a large group of persons who worked cooperatively on various aspects of the study. The topic was a difficult one to handle and one in which little prior research existed. At points questions were raised among the various group members as to whether our research was

taking us too far into fields in which little precedent could be found in methodology. Commitment existed, however, to trying to gain knowledge about the central ideas.

Appreciation is due Jessie A. Roderick, Associate Professor, Department of Early Childhood-Elementary Education. Because of her earlier work in the area of nonverbal communication and teaching behavior, she brought considerable insight and knowledge to the study. From the initiation of the project through to the final editing of the manuscript, she not only assumed much leadership in the ideological considerations of the project, but she also worked in a creative and facilitative manner with the various persons who contributed in any way to the study. To Professor Roderick goes much credit for the development and refinement of the Pupil Nonverbal Behavior Category System.

To Joan Moyer, formerly Associate Professor, Department of Early Childhood-Elementary Education, University of Maryland, and currently Associate Professor of Education, Arizona State University, Tempe, is due credit for her many contributions to the project. With Professor Roderick she conducted Training Sessions for observers and assisted in the development of Pupil Nonverbal Behavior Category System. A major contribution was the brainstorming sessions she conducted with graduate students on implications of the year's work for early childhood education, curriculum development, and teacher education. No idea was considered unworthy of exploration in these sessions. Many of the ideas that grew out of these sessions are reported in the final chapter and are included in Appendix G.

Mrs. Ruth Spodak, Graduate Assistant, Institute of Human Development, assumed major responsibility for the administrative aspects of the program,

for working through the details of programming the data into the computer and for reporting the data. Her skill in research contributed greatly to the project and her willingness to undertake such a complex project was appreciated.

Without the enthusiastic support of a number of graduate students of the College of Education, the project would not have been possible. In listing persons it is always possible that someone who has made a contribution is not acknowledged. We hope such an individual will forgive the oversight.

For assisting in gathering data, gratitude is due these persons:

Tom Adams
Susan Bologna
Joan Coley
Penny Cook
Rosemary Fanti
Iris Goldfinger
Sister Mildred Haipt
Richard Hearn
Ed Holmes
Hazel Holton
Pat Hutcheson
George Kent
Betty Lallier
Jane Larson
Claudette McGurn
Ed Morler
Susan Nichols
Sally Nielsen
Mary Bea Preston
Marsha Raff
June Rehfield
Margaret Rogers
Shelia Sherwood
Carol Stevenson
Clara Stevenson
Karen Verbeke
Tupper Webster
Joanne Wisniewski
Laura Wolf
Martha Wright

We wish to acknowledge the below names for assisting in the review of the literature. Edward Holmes provided leadership for this group and ultimately put together the annotated bibliography included in Chapter One.

Susan Bologna
Nancy Delatush
Barbara Fretz
Ed Holmes
Winifred Lichtenwalter
Claudette McGurn
Ed Morler
June A. Rehfield
Elizabeth Stoessl
Tupper Webster

Thanks are due the following persons for working with Professor Moyer in the brainstorming sessions:

Barbara Fretz
Elizabeth Holden
Ed Holmes
Maureen Meehan
Fran Midkiff
Mary Bea Preston
Jackie Vawter
Tupper Webster

To Professors James Raths and Charles Johnson, Department of Statistics and Measurement, credit is due for their guidance in the many technical aspects of the project. We also wish to acknowledge the support of the Computer Science Center for the use of its facilities.

For working with so very many persons and for seeing that the various parts of the project were prepared and typed along the way, as well as typing the final monograph, appreciation is due Mrs. Rose Marie Dorn, Secretary to the University Nursery-Kindergarten.

This monograph is prepared with the intent that other interested persons will join us in our attempt to understand more adequately non-verbal communication, decision making, and the relationship of the two. Such understanding, it would appear, should enable us to plan more effective programs for young children--programs that mean more sensitive and responsible teachers and children. Education is for the development of the person. Are not sensitivity and responsiveness among the most human of qualities? And can a person be truly sensitive and responsive without the ability to see others? This study reflects an attempt to see the person.

College Park, Maryland
August 1971

Louise M. Berman
Professor and Director
University Nursery-Kindergarten,
and Department of Administration,
Supervision and Curriculum

LIST OF TABLES

Table		Page
I	Interobserver Reliability Scores	37
II	Mean Frequencies and Corresponding Percentages of Occurence for Each Category According to Age and Sex	38
III	Mean Frequencies of Personal Interactions to Nonverbal Behavior Category	42
IV	Relation of Nonverbal Categories to Decision Making Continuum Based on Percentages and Frequencies	49
V	Mean Frequencies of Nonverbal Behavior Categories to Decision-Making Continuum According to Sex . . .	51
VI	Mean Frequencies of Nonverbal Behavior Categories to Decision-Making Continuum According to Age . . .	52
VII	Relation of Personal Interaction to Decision-Making Continuum (Mean Frequencies)	53
VIII	Mean Frequencies of Personal Interaction to the Decision-Making Continuum According to Sex	54
IX	Mean Frequencies of Personal Interaction to the Decision-Making Continuum According to Age	55
X	Summary of Reliability Data Showing Average Reliability for Each Observer with All Other Raters.	60
XI	Nonverbal Behavior Mean Frequencies by Age and Sex .	61
XII	Average Percentage of Total Occurrence of Each Nonverbal Behavior Category According to Age and Sex	65

List of Tables, continued

Table		Page
XIII	Relationship of Nonverbal Behavior Category to Personal Interaction Stated in Mean Frequencies . . .	71
XIV	Relationship of Nonverbal Behavior Categories to the Beginning, Middle, and End of the Decision-Making Continuum Stated in Frequencies	75
XV	Relation of Nonverbal Categories to Decision-Making Continuum According to Sex Stated in Mean Frequencies	77
XVI	Relation of Nonverbal Categories to Decision-Making Continuum According to Age Stated in Mean Frequencies	78
XVII	Mean Frequencies of Personal Interaction to Points on the Decision-Making Continuum.	80
XVIII	Frequency of Personal Interaction to Points on the Decision-Making Continuum According to Sex	81
XIX	Mean Frequencies of Personal Interaction to Points on the Decision-Making Continuum According to Age . .	82
XX	Nonverbal Behavior Mean Frequencies Among Indian Children by Sex	84
XXI	Mean Frequencies of Personal Interaction to Nonverbal Behavior Among Indian Children	86
XXII	Relation of Nonverbal Behavior Categories to Points on the Decision-Making Continuum Among Indian Children (Mean Frequencies)	88

CHAPTER ONE

NONVERBAL BEHAVIOR AS A MEANS OF EXPLORING CHILDREN'S DECISION MAKING

Nonverbal Behavior: A Critical Aspect of Communication

Our sparse knowledge of how children communicate leaves us with no alternative but to investigate further the communication process. Added impetus to study this phenomenon is found in recent advances in communication networks and techniques which facilitate more rapid and complex communication, but at the same time tend to depersonalize interaction among people. Serious study of communication among children should facilitate our ability to infer internal occurrences from overt behavior and in turn to understand what children might be attempting to communicate.

A key concept related to communication is interaction--human interaction in which participants convey meanings. At present no universally accepted concept of communication exists but answers to certain questions contribute to a functional definition of communication. Among the questions which need to be explored are: What happens inside an individual as he attempts to communicate? How does he present himself to others? How do others respond? What does the communicator do with responses? How are messages perceived by the receiver? What is communicated over and above that intended? What do overt behaviors tell about a person as he attempts to communicate with others?

Study of the verbal aspects of the communication process provide partial answers to these questions. However, we are proposing that more thorough answers can be obtained by examining nonverbal components, thus

achieving a more complete picture of the spectrum of human communication. For it is the language of gesture, facial expression, and body movement, and the use of time and space that help convey not only information about external happenings but also about the process by which humans communicate.[1] The total message the person send, which includes not only his words but also his nonverbal behavior, gives clues to the respondent as to the intended interpretation of the message and the anticipated response. It is when the verbal and nonverbal behaviors of the communicators are congruent that free and open communication ordinarily takes place.

Since the importance of nonverbal behaviors in the communicative act is recognized, modes of describing nonverbal behaviors must be developed so that persons can come to a better understanding of the relationship of nonverbal behavior to the total communication process. Such knowledge can then be used in preparing teachers to work more effectively with students at all levels.

It is the intent of this investigation to increase knowledge about the nonverbal aspects of communication, thereby facilitating a teacher's recognizing and synthesizing this knowledge in terms of decisions he makes about what transpires in the classroom. An awareness of the range of nonverbal behaviors and how children utilize them should also aid a teacher in understanding and appreciating the humanizing potential of communication. If human interaction suggests a freeing, a bringing

---

[1]Jurgen Ruesch and Weldon Kees, Nonverbal Communication (Berkeley, California: University of California Press, 1959), p. 7.

out in exchange as opposed to a restricting or narrowing, the more a teacher knows about this type of interaction, the better he can monitor his own behavior to facilitate communication as an open process.

Toffler's prediction that inhabitants of the future will need new skills in learning, relating, and choosing further supports the need to explore the communication process.[2] A life of rapid change and diversity, and new ways of viewing formal schooling hold serious implications for those charged with guiding educational experiences. Individuals who possess skill in and knowledge about communication will not only survive the future but will more likely make worthwhile contributions to it.

Communication goes beyond words. By studying the nonverbal behavior of young children, possibly the intangible, but yet pervasive aspects of the communication process will begin to become tangible.

Decision Making: An Earlier Research Emphasis

In keeping with the policy that research activities of the University of Maryland Nursery-Kindergarten unit be related to broad topics or themes and that they be addressed to those skills identified as necessary for children to acquire, the present study continued and extended the examination of the decision making process as young children engage in it.[3]

Earlier investigations looked at decision making in the classroom

---

[2] Alvin Toffler, Future Shock (New York: Bantam Books, 1971), p. 414.

[3] For a discussion of the process skills being considered in the Nursery-Kindergarten, see University Nursery-Kindergarten Monograph 1, Toward New Programs for Young Children, written by the staff, 1970.

setting and explored factors assumed to be related to the decision-making process. In addition, teachers' perceptions of children as decision makers were compared with decision-making behavior in the classroom, and children's decisions were examined in terms of whether they were self-initiated or were instigated or pressured by a peer or an adult. Findings, conclusions, and recommendations which seemed pertinent to the design and purposes of the present study were:

> Peer influence in decision making was more frequent than teacher influence.
>
> The number of decisions made and independence in decision making appeared to be separate facets of the decision-making process.
>
> The operational definition of decision making needed further refinement and extension.
>
> The nonverbal aspects of the decision-making process needed to be investigated in more depth to determine how they function in decision making.[4]

Basic Assumptions and Definitions

Procedures employed in the planning and execution of this study were based on assumptions relating to nonverbal behavior, the decision-making process, and free play as it functions in nursery and kindergarten classrooms.

Knowledge about the nonverbal aspects of communication is prerequisite to achieving a more complete view of human interaction. The nonverbal behaviors examined in this study are facial expressions, gesture, and body movement. Vocal sounds such as humming and singing

---

[4]Joan M. Poultney, ed., Decision Making in Young Children: Part 2 A Report of Research Findings, Monograph 3 (College Park, Maryland: University of Maryland Nursery-Kindergarten, 1970), pp. 81-87.

in which a child appears to be communicating with himself were also observed. The question of which nonverbal behaviors are communicative in intent is perplexing since one cannot distinguish between those behaviors which are communicative in nature and those which are adaptive or not meant to convey a meaning.[5] Therefore, in this study it is assumed that all nonverbal behaviors have the potential for communicating meaning even though it is not the intent of the sender or doer to convey a message. Individuals, whether or not they are consciously aware of it, are constantly sending and receiving messages. As soon as an action is perceived by another, it takes on a communicative function. The function of nonverbal behaviors in the communicative process takes on greater significance when cross cultural considerations are explored. LaBarre contends that, ". . . kinesiology is . . . one of the most important avenues for better understanding internationally."[6]

In light of these considerations the following assumptions related to nonverbal behavior seem appropriate:

> Nonverbal behavior is communicating without words. It includes facial expressions, testure, and body movement.[7]
>
> All nonverbal behavior has the potential for being communicative in nature.
>
> The context in which behaviors occur is relevant to the interpretation of them.
>
> Nonverbal behaviors vary with clutures.

---

[5] Ruesch and Kees, op. cit., p. 48.

[6] Weston LaBarre, "Paralinguistics, Kinesics, and Cultural Anthropology," in The Human Dialogue: Perspectives on Communication, Floyd W. Matson and Ashley Montagu, eds. (New York: The Free Press, 1967), p. 481.

[7] Charles M. Galloway, Teaching is Communicating: Nonverbal Language in the Classroom (Washington, D.C.: Association for Student Teaching, 1970), p. 4.

Earlier studies conducted by the Nursery-Kindergarten staff attempted to explore rudiments of decision making. In previous monographs, decision making was defined as accepting or rejecting a new direction. In order to extend and clarify this definition, decision making as used in this study is defined in terms of observable behaviors. For this study these behaviors are viewed on a less intentional-intentional continuum ranging from beginning or pre-decision behaviors which suggest little or no intent to middle or exploratory behaviors indicative of more intent to end behaviors which denote strong intent or a child's absorption in or completion of a task. Illustrative behaviors along this continuum might include a child's entering a play area, putting on an apron, moving quickly from one activity to another, and finally selecting an activity such as painting and working at it for a period of time, or until the task is completed. The free play or choice time provides children opportunities for selecting from among a variety of such activities and many of these opportunities provide the chance for decision making as described.

Assumptions related to the decision-making process are:

Decision making can be defined in terms of observable behaviors which can be facilitated by utilizing a range definition.

Activities associated with the free play or choice time in the Nursery-Kindergarten classes afford young children maximum opportunities for making decisions.

Since decision making can be defined in terms of behaviors, it is possible to compare these behaviors and nonverbal behaviors to determine whether or not there exists a relationship between the two.

Research Questions

Findings and recommendations of previous studies, a review of related literature, and consultation with authorities prompted the statement of the following research questions:

What is the frequency with which various nonverbal behaviors occur during free play?

What clusters of nonverbal behaviors occur?

What nonverbal behaviors are associated with the beginning, middle, and end of the decision-making continuum?

What sex and age differences are evident in nonverbal behaviors associated with the beginning, middle, and end of the decision-making continuum?

What personal interactions by sex and age are evident at the beginning, middle, and end of the decision-making continuum?

What nonverbal behaviors are associated with specific activities available to children during the free play period?*

NOTE: The findings relative to the above research questions are not reported in this document but are available for examination in the Nursery-Kindergarten office.

What cross-cultural differences exist in the nonverbal and decision-making behaviors?*

Guide to the Reader

The introductory comments and the discussion of prior studies in decision making conducted in the Nursery-Kindergarten as presented in this chapter establish the rationale for and context of the present

*Research questions added after the Pilot Study and tested in the Principal Study.

study. Specifics relative to the major thrusts of the investigation are outlined in a statement of the basic assumptions of the investigation and the accompanying research questions.

The Annotated Bibliography contains comments on references pertinent to communication in general, nonverbal communication, and decision making.*

Chapter Two consists of a rationale for the Pupil Nonverbal Behavior Category System for studying nonverbal behavior of young children, an account of the development of the system, and a description of each of the categories in it. The original and revised forms of the category system are also included.

Procedures utilized in studying the subjects' nonverbal behaviors are outlined in Chapter Three. There are two sections on procedure--one relating to procedures employed in the Pilot Study and a second to those employed in the Principal Study. In both instances, subjects, observers, and methods of data collection are described.

Chapter Four presents the findings of the Pilot Study and Chapter Five the findings of the Principal Study.

Implications and recommendations for teacher education and curriculum development as they relate to this investigation are explored in the final chapter.

*Instruction to persons who assisted in compiling the Annotated Bibliography are contained in Appendix A.

ANNOTATED BIBLIOGRAPHY

Communication

Definition

Dance, Frank E. X. (ed.). Human Communication Theory: Original Essays. New York: Holt, Rinehart and Winston, Inc., 1967.

The main concern of communication study is the production and composition of message systems. Communication is "social interaction through messages."

Davitz, Joel R. The Language of Emotion. New York: Academic Press, 1969.

The findings of this study suggest that emotion can be described with some objectivity and consensus. Emotion is based upon experienced events and the language used to report that experience. Emotional experience is structured into four major categories in this study.

Duncan, Hugh D. Symbols in Society. New York: Oxford University Press, 1968.

Duncan examines the function and structure of communication from the perspective of the scoiologist. Priority is given communication over expression. The social goals of the communicative process are emphasized.

Goyer, Robert S. "Communication, Communicative Process, Meaning: Toward a Unified Theory," The Journal of Communication, XX (March, 1970), 4-16.

By defining the terms "communication," "communicative process," and "meaning," the author suggests that any observable, definable communicative event is potentially subject to systematic, verifiable analysis for purposes of critical investigation, empirical explanation, and useful prediction of behavior.

Joost, A. M. Meerloo. "Contributions of Psychiatry to the Study of Human Communication," in Human Communication: Original Essays. Frank E. X. Dance (ed.). New York: Holt, Rinehart, Winston, Inc., 1967, 130-159.

In exploring a concept of communication that takes into account the relationship of psychiatry to human communication, Joost looks to the derivation of the word "communication." Among the meanings which emerge are helping, sharing, exchanging and putting together.

Matson, Floyd W. and Ashley Montagu (eds.). The Human Dialogue: Perspectives in Communication. New York: The Free Press, 1967.

In an interdisciplinary approach to the concerns of human communication, the editors offer selections which explore communication as dialogue and communication as monologue.

Ruesch, Jurgen M. D. Therapeutic Communication. New York: W. W. Norton & Company, Inc., 1961.

Concerned with communication as a therapeutic process, Ruesch describes a theory of communication derived from psychoanalysis, reeducation, logical reasoning, and authoritative suggestion.

Nonverbal Behavior In Human Interaction

Birdwhistell, Ray L. "Background to Kinesics," ETC: A Review of General Semantics, XIII (Autumn, 1955), 10-18.

The article presents definition of terms and a brief historical perspective of the study of kinesics. Further, the author divides kinesics into three parts: (1) Pre-kinesics; (2) Micro-kinesics, and (3) Social Kinesics.

Birdwhistell, Ray L. Kinesics and Context. Philadelphia: University of Pennsylvania Press, 1970.

The text presents a series of essays on body motion communication, including some specific findings on the American movement system.

Blumer, Herbert. "Social Attitudes and Nonsymbolic Interaction." Journal of Educational Psychology, IX (May, 1936), 515-523.

Interaction between individuals occurs on at least two levels, symbolic and nonsymbolic. Symbolic involves individuals responding to the meaning or significance of one another's actions. Nonsymbolic is represented by a spontaneous and direct response to the gestures and actions of others without the mediation of any interpretation. The author identifies this affective nature of social attitudes as an important but neglected aspect of the concept of social attitudes.

Buehler, R. and J. Richmond. "Interpersonal Communication Behavior Analysis: A Research Method." Journal of Communication, XIII (September, 1963), 146-155.

The article is a description of a research method of communication. The method contains eight categories of behavior observation ranging from biochemical origins to biosocial aspects.

Geldord, Frank A. "Some Neglected Possibilities of Communication." Science, CXXXI (May 27, 1960), 1583-1588.

The skin offers a valuable supplement to the ears and eyes for relaying some kinds of messages (i.e. emergency warning and alerts). The author suggests that further investigations are needed to determine the ultimate place of cutaneous channels in the total communication area.

LaBarre, Weston. "The Cultural Basis of Emotions and Gestures." Journal of Personality, XVI (September, 1947), 49-68.

The article presents a detailed look at variations in emotions and gestures among world cultures. There is an emphasis upon the clutural basis and the physiologically conditioned response. A large anthology of specific gestures and their cultural significance is also provided.

Middleman, Ruth R. The Nonverbal Method in Working with Groups. New York: Association Press, 1969.

The author emphasizes the nonverbal aspects of social group work. To the author, "nonverbal" refers not to the concept of kinesics but rather to "doing activities"--primarily, games, crafts, and sports. The author stresses the effectiveness of these activities both as social and rehabilitative tools.

Ruesch, Jurgen and Weldon Kees. Nonverbal Communication. Berkeley: University of California Press, 1961.

Visual perception of human relations is defined. Visual perception emphasizes the messages given by nonverbal actions of persons as well as the messages given by objects and pictures.

Relationship of Nonverbal Behavior to Age, Sex, Cultural and Environmental Factors

Hall, Edward T. The Hidden Dimension. New York: Doubleday and Company, Inc., 1966.

The book deals with man's complex system of sensory input which is highly molded and patterned by culture. Emphasis is placed on sociological aspects of man and his use and perception of space.

Hall, Edward T. The Silent Language. New York: Doubleday and Company, Inc., 1966.

Hall develops a terminology which can be applied to all types of communication. He identifies three components of messages both verbal and nonverbal: sets; isolates (components of the sets); and patterns (the way the sets are linked). The author utilizes these concepts as tools in a detailed analysis of American concepts of time and space.

LaBarre, Weston. "Paralinguistics, Kinesics, and Cultural Antrhopology," in The Human Dialogue: Perspectives on Communication. Floyd W. Matson and Ashley Montagu (eds.). New York: The Free Press, 1967, 456-490.

The author presents a broad overview of kinesics from the investigations of "instinctual" movements in animals and man to gestures within a variety of cultural contexts.

Nonverbal Behavior in the Classroom

French, Russell L. "Individualizing Classroom Communication." Educational Leadership, XXVIII (November, 1970), 193-196.

The author stresses the importance of effective teacher-student communication, both verbal and nonverbal, in providing an "environment conducive to self-motivation" on the part of the student. He describes five common types of nonverbal messages sent from the teacher to the pupil, and suggests that the teacher should attempt to be more of a "receiver" of messages than a "sender."

Galloway, Charles M. "Teacher Nonverbal Communication." Educational Leadership, XXIV (October, 1966), 55-63.

The article deals with classroom interactions, the elusive role of words and their meaning and the subtlities of nonverbal expressions.

Galloway, Charles M. Teaching is Communicating: Nonverbal Language in the Classroom. Bulletin No. 29. Washington: Association for Student Teaching, 1970.

Galloway illustrates the importance of nonverbal behavior in classroom communication through the use of numerous examples. The author proposes various methods of describing and analyzing teacher nonverbal behavior.

Garner, C. William. "Nonverbal Communication and the Teacher." School and Society, XCVIII (October, 1970), 363-364.

The author emphasizes the importance of the teacher's nonverbal actions in classroom communications. If successful communication is to be maintained, the teacher should be ware of nonverbal acts which could cause negative reactions in students.

Gibson, James M, and James C. Hall, Jr. Damn Reading! New York: Vantage Press, 1969.

The book criticizes the present emphasis in education on learning to read. The authors suggest other alternatives,such as television and computers. The authors also suggest that the curriculum of the future should include research into the unexplored capabilities of man, including his interpersonal relationships, the sensory and intellectual potential of the individual, extrasensory perception and nonverbal communication.

Kowatrakul, Surang. "Some Behaviors of Elementary School Children Related to Classroom Activities and Subject Areas." Journal of Educational Psychology, L (1959), 121-128.

This research study involved 56 elementary students in three classroom activities in four subject areas in which a newly developed testing instrument for systematic observation of pupil behaviors was administered. Classroom activities and subject areas and some of the behavior categories were found to be significantly related.

Decision Making

Barnard, Chester I. The Functions of the Executive. Cambridge, Massachusetts: Harvard University Press, 1938.

There are two major classes of decisions according to Barnard: positive decisions and negative decisions. Barnard also defines the occasions for decisions to originate and the nature of the environment of decisions.

Cartwright, D. and Zander, A. (eds.). Group Dynamics. New York: Harper and Row, 1960.

The authors define the goal setting process and dynamic variables involved in that process as well as environmental controls over goals. A definition of the decision process and the activities involved in carrying out the decision are given.

Drucker, Peter F. The Effective Executive. New York: Harper and Row, 1966.

Drucker states that in order to be effective an executive must have certain "learnable" practices or "habits." They are: (1) manage time well; (2) focus on results rather than work; (3) build on strengths rather than weaknesses; (4) concentrate on the right priorities, and (5) base decisions on a judgement of "dissenting opinions" rather than on a "consensus of fact."

Feldman, Julian and Herschelle Kantor. "Organizational Decision Making." Handbook of Organizations. Chicago: Rand McNally and Company, 1965.

Feldman and Kantor provide a brief review of the literature pertaining to decision-making models and theories.

Gore, W. J. and Fred Silander. "A Bibliographical Essay on Decision Making." Administrative Science Quarterly, IV (June, 1959), 97-121.

This essay sifts through contributions from sociological, psychological and management science fields to give an overall assessment of research and theory in decision making. The general conclusion is that resulting research is uneven--small areas have been given much attention, other areas little.

Pollay, Richard W. "The Structure of Executive Decisions and Decision Times." Administrative Science Quarterly, XV (December, 1970).

This paper throws doubt on the direct relationship between the difficulty of a decision problem and decision time. A formal theory is proposed, hypothesizing that decision makers take longer to choose from four alternatives, when two alternatives are easily rejected, than when all four alternatives are equal. The results of laboratory experiments support the hypothesis and suggest that decision behavior is related to personality factors.

CHAPTER TWO

THE DEVELOPMENT OF A CATEGORY SYSTEM TO STUDY NONVERBAL BEHAVIOR

Rationale for Category System

Attempts at describing, clarifying, and analyzing classroom interaction have been the foci of many recent research efforts. An initial step in this process has been the development of instruments or systems which facilitate a more systematic examination of communication in the classroom.

Teachers who encourage and support human interaction that is characterized by a concern for conveying meaning in a context which frees and opens instead of restricts and binds will benefit by knowing about the interaction process as children engage in it. For it is the "not knowing" and the resultant insecurity that restricts and closes. Knowledge about the interactive process can be enhanced by an awareness of cues participants give as they convey messages. In turn, such information enables a teacher to act responsibly in terms of these cues. In addition, the teacher is helped to see human interaction as part of the larger stream of behavior.

Since nonverbal behaviors are an integral part of classroom interaction, and since they occur with observable regularity, a systematic approach to identifying, categorizing, and recording these behaviors is appropriate. Such a category system can provide a purposeful focus to teacher observation, thereby facilitating a

teacher's carefully and objectively "reading" the overt behavior of children as it occurs in specific learning experiences. Communicative behaviors and aids which focus on, sort out, and objectify these behaviors take on added meaning when the many factors which influence or color one human's perception of another's behavior are recognized. Individuals need help in achieving, and to a degree maintaining, objectivity in receiving and responding to messages of all types.

Once a teacher becomes aware of students' nonverbal behaviors and realizes how this awareness can influence his own behaviors, he can be more responsive to pupil cues in terms of ideas and feelings being expressed. In light of this knowledge, the teacher reorganizes his thinking and strategies relative to planning, teaching, and evaluating. A system for analyzing nonverbal behavior of children facilitates and encourages a process of reassessing and restructuring with the view to improving the quality of human interaction.

Description of the Pupil Nonverbal Category System

The Pupil Nonverbal Behavior Category System is an instrument for systematically identifying, categorizing, and recording the nonverbal behaviors of young children. In its revised form, it consists of 12 mutually exclusive categories, their descriptions, and illustrative behaviors. The categories were derived by induction from a content analysis of case study records obtained by observing three-, four-, and five-year-olds in classroom settings.

It is generally recognized that any category system reflects to some degree the biases of those who develop it. However, in the process

of arriving at category delimitations, designations, and descriptions, certain guidelines, criteria, and procedures were used.

In employing the content analysis procedure, like or similar behaviors were grouped as they occurred in the running accounts of the case study observations. The content analysis was not approached with any preconceived notions as to which categories should emerge. However, in making decisions relative to the delimitations of each category, knowledge of how young children relate to people and materials in the classroom environment as revealed in live observations and in the literature was utilized. Also, the frequency with which a behavior occurred in the case study observations suggested a priority for including that behavior in the category system.

In designating a name or label for a specific category, terms were selected that were descriptive and representative of the group of behaviors in the category and that tended to readily distinguish one category from another.

Since this instrument is based on a category system in which the observer identifies a behavior and at the same time makes a judgment as to which category symbol is to be recorded, the final tabulations present a sequential account of the numbers and range of nonverbal behaviors exhibited during any given period. The coding unit is a behavior; that is, everytime a subject exhibits a nonverbal behavior a category symbol (letter) is recorded. In addition to recording a symbol for a behavior as it occurred, observers noted on the tally sheet the passage of a designated time unit.

The behavior categories are descriptive in nature and do not imply a value designation. No behaviors are considered inherently good or bad. The purpose of the instrument is not to judge the worth of behaviors but rather to help adults become more aware of pupil nonverbal behaviors and the implications of them for classroom interaction.

Category Descriptions and Illustrative Behaviors

Each of the categories of nonverbal behavior has been defined and a recording symbol, a letter, assigned to it. The purpose of this section is to present the description and a discussion of illustrative behaviors for each category.

> Habitual (H)
> Habitual behaviors are those acts performed automatically. Mechanical personal acts are also designated as habitual.

Nonverbal behaviors which are perfunctory in nature and are designated as habitual include activities such as a child's hanging up his coat, taking his seat, washing his hands, and throwing away milk cartons. Behaviors illustrative of mechanical personal acts include pulling at own clothing, shaking hair out of eyes, and holding hands behind back. It should be noted that behaviors in this category appear to be consistent and automatic in terms of personal behaviors, such as the mechanical personal acts or the routing experiences of the classroom.

Feeling Expression(FE)
Included in this category are facial expressions of feeling, expressions of emphasis, overt expressions accompanying body movement, and vocal sounds by which a person talks with himself.

Behaviors illustrative of facial expressions include frowning, gritting teeth, and smiling. Folding arms and pounding on a table or equipment are examples of expressions of emphasis, and skipping, running quickly, and dragging feet of overt expressions accompanying body movement. Singing, humming, and mumbling to oneself illustrate ways in which children appear to be communicating with themselves.

Focusing Behavior (FB)
Focusing behavior is defined as observing, watching closely, and listening.

Observing an animal, watching a teacher or child perform an act, and listening to someone telling a story or giving directions are examples of focusing behaviors.

Seeking Behavior (SB)
The acts of seeking approval, praise, help, recognition, permission, alternatives and ideas are components of Seeking Behavior.

Among the behaviors illustrative of Seeking Behavior are looking around at people and/or a situation, moving from one object , place, or person to another in quick succession, looking to the teacher or children, and tugging on the clothes of another person.

The duration or length of time a single behavior lasts often facilitates the observer's differentiating between Focusing and Seeking Behaviors. Focusing Behavior is usually of longer duration than the Seeking Behavior. An example of this would be a child's watching a gerbil for several minutes (Focusing Behavior) as opposed to his looking at the gerbil, a group of children building with blocks, and the teacher in quick succession (Seeking Behavior).

NOTE: Based on analysis of data from the pilot study, the Focusing Behavior and Seeking Behavior categories were combined into one category--Focusing Seeking--for use in the Principal Study.

Pause (P)
This category is defined as stopping in the course of action.

A child's stopping in the process of doing something is a pause behavior.

Initiating Behavior Positive (IP)
Positive Initiating Behaviors are defined as bodily contacts and/or gestures in which a child reaches out to show affection, to be friendly, to show interest in, to praise.

Behaviors illustrative of this category include patting a person on the back, tapping on the arm or shoulder, and hugging.

Initiating Behavior Negative (IN)
The Initiating Behavior Negative category is defined as bodily contacts and/or gestures in which a child strikes out at another child or teacher for no apparent reason or reaches for or grabs for a toy and/or materials from another child or teacher.

Hitting, pushing, kicking, biting, pulling hair, slapping, spitting at, snatching, tugging, and pulling objects from another are among the behaviors illustrative of this category.

Task Oriented (TO)
The Task Oriented category is defined as approaching and/or working at an activity and/or materials.

Among the behaviors included in this category are manipulating materials or objects, playing a game, demonstrating a skill or use of materials, pointing out objects, approaching toys or equipment, and returning to a task.

Withdraw (W)
Withdraw is defined as removing oneself from a situation, task, or activity involving people and/or equipment.

Moving away from (leaving) toys, or activity, materials or equipment and avoiding a situation are among the behaviors illustrative of this category.

Movement Toward People (MTP)
Movement Toward People is defined as movement toward a person or persons to direct, initiate, join, or praise.

A child's walking to a person or persons is the illustrative behavior for this category.

Responsive Behavior-Positive (RP)
Responsive Behavior-Positive is defined as responding positively to directions, questions, commands, suggestions, invitations, gestures, to emotional expressions such as crying and shouting, and to deliberate acts such as having been offered a toy.

Sharing materials, performing an activity, discontinuing an action, extending a hand or self in help, putting arm around, accepting a toy, and snuggling up to are among the behaviors included in this category.

Responsive Behavior-Negative (RN)
Responsive Behavior-Negative is defined as responding negatively to directions, questions, commands, suggestions, invitations, gestures, to emotional expressions such as crying and shouting, and to deliberate acts.

Bodily contact, continuing an action, turning away, ignoring, laughing at, pointing at, stomping feet, attacking, and clutching at toys and/or materials are among the illustrative behaviors for this category.

NOTE: The negative or positive nature of a responsive behavior is determined by whether or not it is congruent with the behavior eliciting the response. For example, discontinuing an action is a positive response if this is what the directing behavior calls for.

Confusion (C)
Confusion is defined as a lack of nonverbal expression.

Illustrative behaviors for this category are staring and a blank expression.

NOTE: In the instrument employed in the Principal Study (see revised category system) the Confusion category and accompanying illustrative behaviors were subsumed under the Pause category. In addition, a Cannot Judge (CJ) category was appended to the revised system used in the Principal Study. The Cannot Judge (CJ) is employed when an observer cannot make a judgment as to which category the behavior illustrates or when the child is out of view.

Pupil Nonverbal Behavior Category System

The next few pages contain the Pupil Nonverbal Behavior Category System used in the Pilot Study and its revised form which was utilized in the Principal Study. A description of the procedures for utilizing these Systems in the research projects is in Chapter Three.

PUPIL NONVERBAL BEHAVIOR CATEGORY SYSTEM

Recording Symbol	Category Description	Illustrative Behaviors
H	Habitual Perfunctory acts performed automatically	Hang up coat, take seat, wash hands, throw away milk cartons
	Mechanical personal acts	Mouth open, shrug shoulders, shake hair out of eyes, hands behind back
FE	Feeling Expression Facial expression of feeling	Bite lip, frown, grit teeth, smile
	Communicating with self	Sing, hum
	Overt expression accompanying body movement	Skip, run quickly, drag feet
FB	Focusing Behavior Observes, watches closely, listens	Observe animal, look at teacher or child perform or giving directions, listen to story
P	Pause Stop in course of action	Stop in process of doing something
SB	Seeking Behavior Seeking approval, praise, help, recognition, permission, alternatives, ideas	Look around at people and/or situation; move from one object, place, person to another in quick succession. Grin at teacher, look to teacher or children, tug on clothes of other person

Recording Symbol	Category Description	Illustrative Behaviors
IP	Initiating Behavior Positive Bodily contact in which child reaches out to communicate to show affection, to be friendly, to show interest in	Pat on back, tap on arm or shoulders, hug
IN	Initiating Behavior Negative Bodily contact in which child strikes out at another child or teacher for no apparent reason	Hit, push, kick, bite, pull hair, slap, spit at
	Grabs toy and/or materials from another child or teacher	Snatch, tug, pull toy or material away from person
TO	Task Oriented Approaching and/or working at an activity and/or materials.	Manipulate materials, objects, play game, demonstrate skill or use, point out objects, approach toy or equipment, return to task
W	Withdraw Remove self from situation, task or activity involving people and/or equipment	Move away from (leave) toys, activity, materials, equipment
MTP	Movement Toward People Facilitative movement toward person or persons - to direct, initiate, join, praise	Walk to person or persons, signal (wave arm) to join in venture

Recording Symbol	Category Description	Illustrative Behaviors
RP	Responsive Behavior-Positive Positive response to directions, questions, commands, suggestions, invitations, gestures	Share materials, perform activity, discontinue action, shake head "yes."
	To emotional expressions (crying, shouting)	Extend hand, self in help; walk over to, put arm around
	To deliberate acts (putting arm around, giving toy)	Accept toy, accept affection, sunggle up to
RN	Responsive Behavior-Negative Negative response to directions, questions, commands, suggestions, invitations, gestures	Make a face, bodily contact, continue action, turn away
	To emotional expression (crying, shouting)	Ignore, turn away, laugh at point at
	To deliberate acts	Stomp feet, cry, attack, shake fist, clutch at material and/or toy
C	Confusion Lack of nonverbal expression confusion	Stare, blank expression

REVISED PUPIL NONVERBAL BEHAVIOR CATEGORY SYSTEM

Recording Symbol	Category Description	Illustrative Behaviors
H	Habitual Perfunctory acts performed automatically	Hang up coat, take seat, wash hands, throw away milk cartons
	Mechanical personal acts	Mouth open, shake hair out of eyes, hands behind back pulling at own clothing
FE	Feeling Expression Facial expression of feeling	Bite lip, frown, grit teeth, smile
	Expression of emphasis	Pounding on table or equipment, folding arms
	Communicating with self	Sing, hum
	Overt expression accompanying body movement	Skip, run quickly, drag feet
FS	Focusing-Seeking Observes, watches closely, listens	Observe animal, look at teacher or child perform or giving directions, listen to story
	Seeks approval, praise, help, recognition, permission, alternatives, ideas	Look around at people and/or situation; move from one object, place, person to another in quick succession. Grin at teacher or children, tug on clothes of other person

Recording Symbol	Category Description	Illustrative Behaviors
IP	Initiating Behavior Positive Bodily contact and/or gesture in which child reaches out to show affection, to be friendly, to show interest in, to praise	Pat on back, tap on arm or shoulders, hug
IN	Initiating Behavior Negative Bodily contact and/or gesture in which child strikes out at another child or teacher for no apparent reason	Hit, push, kick, bite, pull hair, slap, spit at
	Reaches for or grabs for toy and/or materials from another child or teacher	Snatch, tug, pull toy or materials away from child or teacher
MTP	Movement Toward People Movement toward person or persons - to direct, initiate, join	Walk to person or persons
P	Pause Stop in course of action	Stop in process of doing something, vacant look
TO	Task Oriented Approaching and/or working at an activity and/or materials.	Manipulate materials, objects, play game, demonstrate skill or use, point out objects, approach toy or equipment, return to task

Recording Symbol	Category Description	Illustrative Behaviors
RP	Responsive Behavior-Positive Positive response to directions, questions, commands, suggestions, invitations, gestures	Share materials, perform activity, discontinue action, shake head "yes", gesture with hands "I don't know" shrug shoulders
	To emotional expressions (crying, shouting)	Extend hand, self in help; walk over to, put arm around
	To deliberate acts (putting arm around, giving toy)	Accept toy, accept affection, snuggle up to
RN	Responsive Behavior-Negative Negative response to directions, questions, commands, suggestions, invitations, gestures	Make a face, bodily contact, continue action, turn away
	To emotional expression (crying, shouting)	Ignore, turn away, laugh at, point at
	To deliberate acts	Stomp fee, cry, attack, shake fist, clutch at toy and/or material
W	Withdraw Remove self from situation, task or activity involving people and/or equipment	Move away from (leave) toys, activity, materials, equipment Avoid a situation
CJ	Cannot Judge Observer cannot make a judgment or child is out of view	

CHAPTER THREE

PROCEDURES UTILIZED IN STUDYING CHILDREN'S NONVERBAL BEHAVIOR

The study being reported was developed in two parts. The first months of the year in which the study took place were devoted to the Pilot Study. The Principal Study was carried out in the latter part of the same academic year. Procedures for both the Pilot and the Principal Studies are reported in this chapter.

Procedures Used in Pilot Study

The Pilot Study was designed to investigate the relation of nonverbal behavior to the decision-making process in children from age three to five. The first requirement was to develop a method for recording nonverbal behavior. For the initial data base, observers took notes in a diary fashion for a case record of an individual child. These observations were then subjected to a content analysis, and a category system was developed.

Observers then, utilizing the category system and a tally sheet, noted the nonverbal behavior of the child. Observers also recorded on the tally sheet whether the child was perceived to be at the beginning, middle, or end of the decision-making continuum.

Observations were made in three of the Nursery-Kindergarten classes, covering the age span of three to five. Each classroom was equipped with an observation booth from which all the observations recorded in this study were made. The booth had a one-way screen between it and

the classroom. Although visual observation was usually quite good with this arrangement, verbal exchanges were sometimes missed.

Method of Observation

Case Record. For the first part of the Pilot Study, observers were instructed to record in diary fashion all the behaviors which their subject exhibited, with special attention to nonverbal behaviors. They were told to include verbal activity if it seemed relevant, or complemented nonverbal behaviors. If there was a choice to be made, however, in that observers were unable to record both, nonverbal behavior was to take precedence. Instructions for recording observations of children's nonverbal behaviors are included in Appendix B.

Prior to recording, members of the observation team met with a staff member who explained the way they were to record. They were given a copy of an excerpt from Midwest and Its Children[1] to illustrate the kind of recording desired. A list of key words to highlight nonverbal aspects of behavior was given to observers. This list is included in Appendix C which is a brief statement of the original research proposal. After a week of recording there was another meeting to answer any questions which had arisen and to review observers' recording. Each observer was given individual notes on his own reports. The primary emphasis of this meeting was to encourage and to clarify some specific aspects of nonverbal behavior.

Pupil Nonverbal Behavior Category System. After the case records were completed, the initial form of the Pupil Nonverbal Behavior Category System was derived based on the information obtained from the case records. The category system and its derivation are described in Chapter Two.

---

[1]Rober Barker and Herbert F. Wright, Midwest and Its Children (Evanston, Illinois: Row, Peterson, and Company, 1954), pp. 201-202; 214-219.

Each of the 13 categories was explicitly defined and included examples of illustrative behaviors falling within that category. There were two training sessions, each approximately one hour in length to train the observers in this system. A 15-minute videotape focusing on the behavior of one child in the Nursery-Kindergarten was used in these sessions.

Observers were asked to recrod on a tally sheet the nonverbal behavior categories the subject was exhibiting at the time of observation. The tally sheet and accompanying directions are in Appendix B.

In addition to the specific category observed, three other aspects of the situation were recorded: 1) whether a personal interaction was observed simultaneously with the activity--with a peer, a group, a teacher or a student teacher; 2) whether the task was completed, defined either in terms of a logical termination to the task, or by a lapse of more than five minutes at a single activity; and (3) whether the activity indicated a "beginning," "middle," or "end" of a decision on the part of the subject as inferred by the observer.

Data Collection. Each of the ten observers observed for a total of three hours using the category system. All observations were made during the free play period. The procedure was to record for ten minutes, take a five-minute break, and then record for another ten minutes. The process was repeated. For the three hours of observing, a total of 120 minutes of solid data were obtained from each observer. Since there were ten observers and ten subjects, there was a total of 120 minutes of data per subject. It should be noted that due to absences, data for two of the subjects were incomplete and their results have been prorated to be compatible with the rest of the data obtained. A

timekeeper was present during recording to indicate the end of every thirty-second time frame. Observers noted these time frames on their tally sheets. (See Appendix B.) The data were collected over a three-week period. All observing was done in the observation booths adjacent to each classroom as previously described.

Subjects. All subjects were children at the University Nursery-Kindergarten. Subjects were chosen at random to satisfy the following criteria: a representative sample from each of the three age groups, and a comparable number of boys and girls. The sample was comprised as follows:

Age	Girls	Boys	Total
3	2	1	3
4	3	1	4
5	1	2	3
	6	4	10

Further care was taken to ensure that none of the children used for case records was included in the group observed with the category system. Although there are four classes in the school, scheduling necessitated that only three classes be used. The mixed group of three- and four-year-olds was not included since a representative age sampling could be obtained from the other three classes.

Observers. The observers were graduate students from a curriculum class for whom this assignment was one option for satisfying a course requirement. There were ten observers, eight women and two men. The

same group of observers participated throughout the Pilot Study, recording the case material and also using the category system.

Procedures for Principal Study

Data Collection

Data collection procedures paralleled those of the Pilot Study fairly closely. One change in the data collection and consequently in the form of the tally sheet was the addition of a column to note the activity in which the child was engaged. Examples of such activities might include painting, block play, or puzzles. The revised form of the tally sheet and accompanying directions are in Appendix D. Although the data on activities as described above are not included in this report they are on file in the University Nursery-Kindergarten. All observations were made during the free play period. The procedure again was to record for ten minutes, take a five-minute break and record for another ten minutes. This schedule was continued for an hour. Each subject was observed for one-hour sessions, providing a total of 120 minutes of solid data for each child. Makeup sessions were arranged so that data were complete for each of the 21 subjects. A timekeeper was present in the observation booth with the observers and indicated the end of each one-minute period so that the observers could note this on their tally sheets. Observations were made over a five-week period and took place in the observation booths adjacent to the classrooms.

Subjects

All subjects were children at the University Nursery-Kindergarten.

Four subjects (two boys and two girls) were selected from each of the four classrooms. In addition five Indian children were selected from the same classrooms to provide cross-cultural comparisons. This resulted in a total N=21 children. Since the classroom composition did not reflect consistent age groupings, the following population resulted:

	Age	Girls	Boys	Total
General Population	4	4	3	7
	5	2	3	5
	6	2	2	4
Indian Population	4	-	4	4
	5	1	-	1

Care was taken to insure that none of these children had been included in any phase of the Pilot Project.

Observers

The observers were graduate students in the College of Education. The majority of them were from a curriculum class for whom this assignment was one option for satisfying a course requirement. The remainder of the observers participated as part of an independent studies project being conducted with one of the principal investigators. There were 20 observers, 17 women and three men.

CHAPTER FOUR

FINDINGS OF PILOT PROJECT

This chapter is organized according to the Research Questions posed in Chapter One. The statistical data and the discussion are presented together for each question.

In several cases the data were compared on the basis of frequency as well as percentage of occurrence. It was felt that this provided a more realistic picture since there was often a large difference in the total number of behaviors scored by each observer. In the most extreme case, one observer recorded more than twice as many behaviors as did another observer viewing the same activity. Converting to percentages then compensated for these differences and allowed comparisons among the results without distorting them.

The results presented in this monograph highlight the most important findings. The raw data and additional tables and results are on file and are available at the University Nursery-Kindergarten.

Establishing Reliability Among Observers Utilizing the Pupil Nonverbal Behavior Category System

Reliability scores were based on observers' tallies during a viewing of a videotape used specifically for the reliability session. The tape had been made previously and consisted on a 20-minute segment in a typical Nursery-Kindergarten classroom. All observers were shown the tape at the same time. They recorded for ten minutes, took a five-

minute break and then resumed recording for ten minutes. This was the same procedure used during the actual recording.

The reliability between observers was calculated using Scott's phi coefficient (Scott 1955).[1] Frequencies were adjusted to percentages for this calculation. Comparisons were made between all possible pairs of observers. There were forty-five comparisons which are shown in Table I. The figures ranged from .09 to .68 for individual reliabilities for any two observers. Fifty percent of the reliabilities were above .36.

What is the Frequency with which Various Nonverbal Behaviors Occur During Free Play?

Relation to Age and Sex

The total number of occurrences for each of the 13 categories of the Nonverbal Behavior Category System were examined from several viewpoints. Specifically, comparisons were made of the number of times each category was observed according to the age and sex of the subject and the person with whom that activity occurred.

Table II shows the mean frequencies and corresponding percentages of occurrence for each category according to the age and sex of the subject. (Figures were compared on the basis of means since the number of subjects in each group was not equal.) These frequencies varied considerably with age and sex although Focusing Behavior was the most popular category in almost all cases.

Discussion. The most frequent behavior for all groups except the three-year-old boys was Focusing Behavior. (For this group Focusing Behavior was the second most frequent category.) Those behaviors which were very infrequently observed for all groups included

---

[1] W. A. Scott, "Reliability of Content Analysis: The Case for Nominal Scale Coding," Public Opinion Quarterly, 1955, 19, 321-25, p. 323.

TABLE I

INTEROBSERVER RELIABILITY SCORES

Observer	1	2	3	4	5	6	7	8	9	10
1	x	.67	.39	.38	.43	.36	.62	.66	.16	.48
2		x	.40	.37	.38	.56	.25	.54	.28	.42
3			x	.18	.18	.21	.09	.22	.44	.18
4				x	.13	.52	.35	.29	.27	.43
5					x	.22	.37	.52	.16	.68
6						x	.26	.30	.24	.28
7							x	.31	.36	.40
8								x	.21	.57
9									x	.22
10										x

TABLE II

MEAN FREQUENCIES AND CORRESPONDING
PERCENTAGES OF OCCURENCE FOR EACH CATEGORY
ACCORDING TO AGE AND SEX

Category	Three-Year-Olds			
	Male		Female	
	Occurrences			
	Frequency	Percent	Frequency	Percent
Habitual	24	7.7	17	4.6
Feeling Expression	55	17.7	44	11.9
Focusing Behavior	49	15.8	89	24.3
Pause	21	6.7	1	0.3
Seeking Behavior	39	12.5	35	9.5
Initiating Positive	3	0.9	44	11.9
Initiating Negative	2	0.6	2	0.3
Task Oriented	29	9.3	31	8.4
Withdraw	37	11.9	23	8.4
Movement Toward People	23	7.4	45	6.3
Response Positive	22	7.0	4	12.3
Response Negative	5	1.6	1	1.1
Confusion	1	0.3	1	0.3
TOTAL	310		367	

Table II, continued

Category	Four-Year-Olds			
	Male		Female	
	Occurrences			
	Frequency	Percent	Frequency	Percent
Habitual	28	13.4	44	8.9
Feeling Expression	15	7.2	41	8.3
Focusing Behavior	29	13.9	158	32.0
Pause	3	1.4	14	2.8
Seeking Behavior	14	6.7	64	13.0
Initiating Positive	10	4.8	21	4.3
Initiating Negative	10	4.8	-	-
Task Oriented	24	11.5	31	6.3
Withdraw	28	13.4	21	4.3
Movement Toward People	22	10.5	26	5.3
Response Positive	24	11.5	67	13.6
Response Negative	1	0.5	5	1.0
Confusion	1	0.5	1	0.2
TOTAL	209		493	

Table II, continued

Category	Five-Year-Olds			
	Male		Female	
	Occurrences			
	Frequency	Percent	Frequency	Percent
Habitual	74	16.7	33	13.3
Feeling Expression	50	11.3	9	3.6
Focusing Behavior	111	25.1	67	26.9
Pause	28	6.3	2	0.8
Seeking Behavior	40	9.0	45	18.1
Initiating Positive	22	5.0	11	4.4
Initiating Negative	-	-	-	-
Task Oriented	27	6.1	22	8.8
Withdraw	21	4.7	14	5.6
Movement Toward People	21	4.7	20	8.0
Response Positive	45	10.2	19	7.6
Response Negative	1	0.2	-	-
Confusion	3	0.7	7	2.8
TOTAL	443		249	

Confusion, Response Negative, and Initiating Negative. It was interesting to note that the level of Initiating Negatives was quite high for four-year-old boys compared to the other age groups. (48% vs. less than one percent for all other groups.) This emphasized a finding that became very obvious throughout this analysis; namely: sex and age were significant variables.

Relation of Nonverbal Behavior to Personal Interactions

Personal interaction was defined as a behavior which was directed toward, in response to, or in cooperation with a peer, a group of children, a teacher or a student teacher.

A comparison was made of the mean frequencies of each category related to the particular persons involved, either the peer, group, teacher or student teacher. Certain behaviors, such as Pause and Confusion, by definition did not have the possibility of any personal interaction. Again a difference existed from one age to another and between boys and girls. Except for the five-year-olds, there were many more personal interactions for the girls than there were for the boys.

Table III shows the number of times a particular personal interaction occurred within a given category according to the age and sex of the subject. These figures were based on the mean number of times and, therefore, sometimes included decimal figures.

TABLE III

MEAN FREQUENCIES OF PERSONAL INTERACTIONS
TO NONVERBAL BEHAVIOR CATEGORY

Category	Three-Year-Olds							
	Male				Female			
	Peer	Group	Teacher	Student Teacher	Peer	Group	Teacher	Student Teacher
Habitual	-	-	1	-	-	0.5	-	0.5
Feeling Expression	1	3	3	-	1	3	-	4
Focusing Behavior	10	9	17	-	20	17	6	14.5
Pause	-	-	-	-	-	-	-	-
Seeking Behavior	-	-	-	-	3.5	9.5	3.5	3.5
Initiating Positive	1	1	-	-	8.5	13.5	2	15.5
Initiating Negative	1	1	-	-	1.5	-	-	-
Task Oriented	-	-	-	-	2	7	-	1
Withdraw	-	-	-	-	-	-	-	-
Movement Toward People	8	10	2	-	3.5	11	4	4.5
Response Positive	4	7	-	-	12	11.5	5	16
Response Negative	5	-	-	-	3	0.5	-	0.5
Confusion	-	-	-	-	-	-	-	-
TOTAl	30	31	23	0	55	73.5	20.5	60

Table III, continued

Category	Four-Year-Olds							
	Male				Female			
	Peer	Group	Teacher	Student Teacher	Peer	Group	Teacher	Student Teacher
Habitual	-	1	1	-	0.3	-	-	-
Feeling Expression	2	2	2	-	-	0.3	0.3	-
Focusing Behavior	4	2	9	-	17.7	15.7	18	5
Pause	-	-	-	-	-	-	-	-
Seeking Behavior	1	1	1	-	5.7	9.3	4.3	2
Initiating Positive	5	-	-	1	12.3	1	2	2.3
Initiating Negative	8	-	-	-	-	-	-	-
Task Oriented	4	4	3	-	1.3	1.3	1	-
Withdraw	-	2	1	-	0.3	-	-	-
Movement Toward People	5	10	3	1	4.3	6.7	4	3.3
Response Positive	4	1	17	1	16.3	9	16.3	8
Response Negative	-	-	1	1	4.3	-	-	0.3
Confusion	-	-	-	-	-	-	-	-
TOTAL	33	23	38	3	62.5	43.3	35.9	20.9

Table III, continued

Category	Five-Year-Olds							
	Male				Female			
	Peer	Group	Teacher	Student Teacher	Peer	Group	Teacher	Student Teacher
Habitual	-	-	-	-	-	1	-	-
Feeling Expression	-	0.5	0.5	-	-	-	1	-
Focusing Behavior	31.5	36	19.5	2	14	15	11	4
Pause	-	-	-	-	-	-	-	-
Seeking Behavior	-	9.5	3	0.5	1	6	5	-
Initiating Positive	12	6	-	-	7	1	3	-
Initiating Negative	0.5	-	-	-	-	-	-	-
Task Oriented	1	3.5	1.5	-	3	3	-	-
Withdraw	-	0.5	-	-	-	-	-	-
Movement Toward People	2	9.5	0.5	-	4	6	10	-
Response Positive	23	2	14	2	9	2	8	-
Response Negative	0.5	-	-	-	-	-	-	-
Confusion	-	-	-	-	-	-	-	-
TOTAL	70.5	67.5	39	4.5	38	34	38	4

Discussion. From this table, two important kinds of information can be obtained: the behaviors which most often involved another person or other persons and the comparative differences in personal interactions occuring between boys and girls at the three age levels. The greatest number of personal interactions occurred with Focusing Behavior which was also the most frequently observed behavior. Response Positive and Movement Toward People categories also showed a large number of personal interactions. This seemed logical based on the nature of these categories; both Response Positive and Movement Toward People were defined in terms of actions towards persons. However, Seeking Behavior which was similarly defined and was a high frequency category did not show as great a number of personal interactions.

A further comparison was made among the different subject groups. In two-thirds of the cases (the exceptions were three-year-old girls and four-year-old boys) the number of interactions with peers and groups was greater than that with either the teacher or student teacher. In two-thirds of the cases, the number of personal contacts was greater with an individual peer than with the group. With the three- and four-year-olds, the girls had more personal contacts than did the boys; however, the reverse was the case with the five-year-olds.

What Clusters of Nonverbal Behaviors Occur?

Four specific behavior categories were chosen at random to determine the presence of category clusters. The behavior occurring immediately before and immediately following the specific category defined the cluster. For example, the sequence,--Initiating Positive -

Seeking Behavior - Withdraw, was considered a cluster around the category Seeking Behavior. Any grouping or cluster was included if it occurred more than once in the total sample. This analysis was made for Seeking Behavior (SB), Initiating Positive (IP), Withdraw (W), and Response Positive (RP). This was viewed as a representative sample which would indicate the degree to which behaviors appeared to occur with regularity in identifiable sequences.

Discussion. The total number of clusters varied with each category. Some behaviors seemed to be organized in a regular pattern which was repeated frequently. The purpose of this analysis was to determine if such regularities occurred and then to determine the situation which gave rise to that regular pattern. It was found that there were a number of regular sequences which occurred with each behavior. These could be examined in more detail as to the situation in which they occur, the variation with age and sex of the subject, and the relation of these clusters to the decision-making process. The data to facilitate these analyses are on file in the Nursery-Kindergarten.

What Nonverbal Behaviors are Associated with the Beginning, Middle, and End of the Decision-Making Continuum?

Category Frequency

The final part of this section deals with specific relations between nonverbal behavior and decision making. For this study decision making was defined on the basis of a continuum of behaviors ranging from those behaviors suggesting less intent on the part of the child to behaviors indicative of greater intent. The beginning or pre-decision behaviors suggest little or no intent, middle or exploratory behaviors more intent, and end behaviors strong intent. The observers

indicated this factor as part of their recording task by placing a B (beginning behavior), M (middle behavior) or E (end behavior) after behaviors they judged as illustrative of these designated points on the decision-making continuum. It was assumed that this classification provided an index to the point on the decision-making continuum in which the subject was involved. Again, this dimension was examined with respect to the category involved, the age of the subject, the sex of the subject, and any related personal interaction recorded with the behavior. These relationships are shown in Tables IV - IX and are discussed below.

Discussion. Based on these data, the greatest number of beginning points was categorized Focusing Behavior; and the greatest number of end points was categorized Withdraw. However, if the figures were converted to percentages so that the absolute frequencies were not critical, the picture changed somewhat. The raw data before the conversion are in Appendix E. Due to individual differences among observers, the total frequencies for each category were not comparable. Noting, therefore, that the behavior most frequently associated with "middle" was Focusing Behavior may have reflected nothing more than the fact that Focusing Behavior was the most frequently observed category. Converting to percentages, therefore, eliminated this problem. Each number was then based on the percentage of the total times for that category relative to its own frequency, and not to the overall numbers recorded. After this conversion, categories were ranked as they related to decision-making behavior as shown in Table IV. The category with the most frequent occurrence at the "beginning" was ranked "1," the one with

the next highest occurrence was ranked "2" and so on. This was done on the basis of frequency and percentage data for beginning, middle, and end. The Response Negative, Confusion, and Initiating Negative categories were eliminated from this table since total frequencies for each were so small (less than a total of eight occurrences) that the comparisons became meaningless and were in fact misleading.

From Table IV a more detailed comparison highlights the differences obtained based on using either the percentage or the frequency figures. The chart that follows shows the three categories most often correlated with each point of the decision-making continuum:

Beginning		Middle		End	
Percent	Frequency	Percent	Frequency	Percent	Frequency
Task Oriented	Seeking Behavior	Pause	Focusing Behavior	Withdraw	Withdraw
Movement Toward People	Task Oriented	Habitual	Seeking Behavior	Task Oriented	Task Oriented
Seeking Behavior	Focusing Behavior	Focusing Behavior	Response Positive	Response Positive	Response Positive

The order of these categories changed slightly with conversion to percentages.

There was a distinct difference in the categories associated with the different points in decision making. Some were logical on a common sense basis; for example, Focusing Behavior and Seeking Behavior seemed to be related to beginning (or middle) of the continuum on a logical basis whereas Withdraw was more closely related to the end of the decision-making continuum and in fact this distinction was supported by the data.

TABLE IV

RELATION OF NONVERBAL CATEGORIES TO DECISION MAKING CONTINUUM BASED ON PERCENTAGES AND FREQUENCIES*

Category	Decision Making Continuum					
	Beginning		Middle		End	
	Percent	Frequency	Percent	Frequency	Percent	Frequency
Habitual	5	8	2	6	9.5	8.5
Feeling Expression	4	6	4	4	9.5	8.5
Focusing Behavior	6.5	3	3	1	7	4
Pause	9	10	1	9	5	10
Seeking Behavior	3	1	5	2	8	6
Initiating Positive	8	7	6	5	4	5
Task Oriented	1	2	9	8	2	2
Withdraw	10	9	10	10	1	1
Movement Toward People	2	4	8	7	6	7
Response Positive	6.5	5	7	3	3	3

*Rank of 1 indicates the highest percentage or frequency of occurrence of that category with the given point in the decision-making continuum. Rank of 10 indicates the lowest number of occurrences of the category in relation to that point in the decision-making continuum.

What Sex and Age Differences are Evident in Nonverbal Behaviors Associated with the Beginning, Middle, and End of the Decision-Making Continuum?

Tables V and VI are presented for comparison. They illustrate the relation between the decision-making continuum and the nonverbal categories according to sex and age respectively. The frequency with which each category was recorded corresponding to a beginning, middle,or end point on the decision-making continuum is presented for subjects in each age group.

Discussion. The most obvious finding in Table V is that girls exhibited more decision-making behaviors than did boys. This was true for all age groups. Moreover, the number of middle points recorded was the highest and the number of end points recorded was the fewest. That is, most of the behavior observed corresponded to a middle area or an exploratory type of activity on the behavior continuum of more intent to less intent which defines the decision-making dimension.

Table VI shows the relations between age and points on the decision-making continuum. Four-year-olds showed the greatest amount of decision-making activity of the three age groups.

What Personal Interactions by Sex and Age are Evident at the Beginning, Middle, and End of the Decision-Making Continuum?

Table VII shows the summary relation of personal interaction to points on the decision-making continuum. Tables VIII and IX show this relation as it varies with sex and age respectively. The results indicate the following: For all groups most points on the decision-making continuum are not correlated with the presence of any other person. Of the persons involved, the relation occurring most frequently is that with the group for all points of the decision-making continuum.

TABLE V

MEAN FREQUENCIES OF NONVERBAL BEHAVIOR CATEGORIES TO DECISION-MAKING CONTINUUM ACCORDING TO SEX

Category	Decision-Making Continuum					
	Beginning		Middle		End	
	Male	Female	Male	Female	Male	Female
Habitual	0.8	1.7	2.5	7.7	0.8	0.2
Feeling Expression	2.3	2.0	3.8	9.8	-	0.7
Focusing Behavior	3.3	6.2	7.8	29.2	1.8	1.7
Pause	0.3	-	1.8	1.3	-	0.2
Seeking Behavior	4.8	7.3	2.3	21.8	1.0	1.3
Initiating Postivie	0.8	1.8	1.3	9.0	-	2.2
Initiating Negative	-	-	1.8	-	0.5	-
Task Oriented	4.8	6.3	1.8	3.0	3.3	5.7
Withdraw	2.3	0.5	5.8	1.0	7.3	10.5
Movement Toward People	2.3	5.2	2.8	5.5	0.5	1.3
Response Positive	1.5	3.0	4.5	12.0	0.5	4.0
Response Negative	-	0.5	-	0.3	-	0.3
Confusion	0.3			0.3		

TABLE VI

MEAN FREQUENCIES OF NONVERBAL BEHAVIOR CATEGORIES TO DECISION-MAKING CONTINUUM ACCORDING TO AGE

Category	Decision-Making Continuum: Beginning Age			Middle Age			End Age		
	3	4	5	3	4	5	3	4	5
Habitual	0.3	1.5	2.0	3.0	6.3	6.7	0.7	0.5	-
Feeling Expression	2.7	2.3	1.3	12.3	6.0	4.3	-	1.0	-
Focusing Behavior	1.0	8.8	4.0	16.3	31.0	12.0	0.7	2.5	1.7
Pause	0.3	-	-	0.8	2.3	1.3	-	0.3	-
Seeking Behavior	3.7	8.0	6.8	6.0	25.3	7.0	1.3	1.0	1.3
Initiating Positive	0.3	2.0	1.8	9.3	5.0	3.7	0.3	2.8	0.3
Initiating Negative	-	-	-	-	-	-	0.3	0.3	-
Task Oriented	5.3	7.8	3.3	3.7	2.3	1.7	8.3	3.5	2.7
Withdraw	3.0	-	1.0	3.3	0.5	0.3	11.0	7.8	9.3
Movement Toward People	4.0	3.5	4.7	3.3	4.5	5.3	0.7	2.0	-
Response Positive	1.0	4.3	1.3	9.7	8.8	8.8	0.3	5.3	1.3
Response Negative	-	0.8	-	0.3	0.3	-	-	0.5	-
Confusion	0.3	-	-	-	0.5	-	-	-	-

TABLE VII

RELATION OF PERSONAL INTERACTION
TO DECISION-MAKING CONTINUUM
(MEAN FREQUENCIES)

Personal Interaction	Decision-Making Continuum			
	Beginning	Middle	End	Total
No one	103	75	96	274
Peer	14	23	14	51
Group	52	36	24	112
Teacher	17	20	12	49
Student Teacher	4	4	1	9
TOTAL	190	158	147	495

TABLE VIII

MEAN FREQUENCIES OF PERSONAL INTERACTION TO THE DECISION-MAKING CONTINUUM ACCORDING TO SEX

Decision-Making Continuum	Personal Interaction	Male	Female
Beginning	No One	49	54
	Peer	5	9
	Group	17	35
	Teacher	11	6
	Student Teacher	-	4
Middle	No One	49	26
	Peer	7	16
	Group	10	26
	Teacher	10	10
	Student Teacher	-	4
End	No One	44	52
	Peer	4	10
	Group	8	16
	Teacher	8	4
	Student Teacher	-	1

TABLE IX

MEAN FREQUENCIES OF PERSONAL INTERACTION TO THE DECISION-MAKING CONTINUUM ACCORDING TO AGE

Point on Decision-Making Continuum	Personal Interaction	Age		
		3	4	5
Beginning	No One	33	38	37
	Peer	-	9	6
	Group	12	21	14
	Teacher	5	5	8
	Student Teacher	4	1	-
Middle	No One	28	21	33
	Peer	8	12	6
	Group	13	18	8
	Teacher	2	9	11
	Student Teacher	5	-	-
End	No One	45	30	37
	Peer	6	10	4
	Group	1	15	9
	Teacher	1	3	7
	Student Teacher	1	-	-

Discussion. Table VIII shows again the large number of times decision-making behaviors are made which do not correlate with another's presence. In most cases more than half of the decision-making behaviors are not correlated with the presence of another person. Sex differences can be noted. Whereas girls participate in a total of more decision-making behaviors as mentioned above, boys show that they engage in a greater percentage of their decision-making behaviors alone. In all cases, the percentage of decision-making behaviors not correlated with another person is higher for boys than for girls. There does not seem to be any significant variation with age on this factor.

Summary

In this chapter data were presented from the Pilot Study. The research questions asked in Chapter One were answered in terms of the data. Children do make decisions and it appears that nonverbal behaviors related to decision-making behaviors as described on the Pupil Nonverbal Behavior Category System can be observed and tallied. Further exploration into the decision-making behavior of young children and its relationship to nonverbal behavior is reported in Chapter Five which is a report of the findings of the Principal Study.

CHAPTER FIVE

FINDINGS OF THE PRINCIPAL STUDY

This chapter presents the results of the Principal Study. It is organized in a similar manner to Chapter Four which focused on the results of the Pilot Study, that is, the data are presented and discussed in response to the specific research questions to which they pertain. Since the scope of the Principal Study exceeded that of the Pilot Study, there are some questions included here which were not discussed previously. Also, on the basis of the Pilot Study, aspects of certain questions were not treated in the Principal Study.

One major area not investigated earlier involved a cross-cultural comparison between five children of Indian parentage and children from families of the general population in the same classes. The cross-cultural data are presented at the end of this section.

Since there was a span of several months between data collection for the Pilot Study and the Principal Study, the ages of the subjects had changed. Subjects' ages were taken at their nearest birthday so that four-year-olds ranged from three years- six months to four years- six months; five-year-olds ranged from four years- six months to five years- six months in age. For this reason results in this section compare four-, five-, and six-year-olds whereas the Pilot Study considered three-, four-, and five-year-olds. Although the same population of children was used, since the data were collected at a later date, subjects were correspondingly several months older.

The data from the Pilot Study were often discussed in terms of frequencies and percentages to compensate for individual differences among observers. In this phase of the study, these calculations were nearly identical; so only frequency data were presented. It is very possible that the increased number of observers and the additional training eliminated this discrepancy. Since the number of subjects in each group was not always equal, the mean frequency has typically been used as the most representative measure.

Establishing Reliability Among Observers Utilizing the Pupil Nonverbal Behavior Category System

Reliability scores were based upon the observations of the data-gathering team. The team observed a single child in the natural classroom setting for a 30-minute period. For the Pilot Study reliability scores were based upon the team's analysis of a videotape. It was felt, however, that a natural setting in which the child could be seen in the total context of the classroom would provide a more realistic setting to establish reliability than a videotape which necessitates an incomplete picture of many of the variables which might affect the child's behavior. Due to the large number of observers, it was necessary to schedule two reliability sessions. Each group observed the same child in the same classroom, but on two different days. The child observed was a four-year-old girl who was not included in the sample. Observations were made from the observation booth adjacent to the classroom. The observation booths adjacent to each classroom were also used for gathering data in both studies. Observers recorded data for ten minutes, took a five minute break, and then recorded for another ten-minute period. This was the same procedure as was followed during data collection.

Reliability scores were calculated separately for the two groups of observers. Scores were based on the Scott's phi coefficient as they were in the Pilot Study; however, these data were processed by Scottr,[1] a computer program.[2] The results, therefore, were in a slightly different format and the three sets of reliability scores (one for the Pilot Study, and two for the Principal Study) are presented together for comparative purposes in Table X.

The most easily compared figure is the coefficient for the entire rater group which was .20 for the Pilot Study and .25 and .37 for groups one and two respectively of the Principal Study. The reliabilities improved as a result of the changes made after the Pilot Study.

What is the Frequency with which Various Nonverbal Behaviors Occur During Free Play?

Frequency of Nonverbal Behaviors as Related to Age and Sex

The frequencies with which each of the behavior categories were recorded are given in Table XI according to the age and sex of the subjects. In all cases Focusing Seeking Behavior and Feeling Expression Behavior were the first and second most frequently observed categories.

Discussion. The five-year-old boys showed the greatest number of recorded behaviors and the six-year-old girls showed the fewest number of recorded behaviors. In all cases--for each age and with both the boys and the girls--the two most frequently observed categories were Focusing Seeking Behavior and Feeling Expression in that order. The Pause was

---

[1]Thomas B. Gregory, "A Computer Program for Calculation of Scott's Coefficient of Observer Reliability." Educational and Psychological Measurement, 1970, 30, 183-185, p. 183.

[2]Computer support was received from the Computer Science Center, University of Maryland, College Park, Maryland.

TABLE X

SUMMARY OF RELIABILITY DATA
SHOWING AVERAGE RELIABILITY FOR EACH OBSERVER
WITH ALL OTHER RATERS

	Principal Study		Pilot Study
	Group 1	Group 2	
Observer			
1	.0254	.2902	-.3185
2	.2837	.3974	.3624
3	.1640	.5100	.2067
4	.3914	.2703	.2532
5	.2665	.4013	.2860
6	-.0372		.2669
7	.2105		.1822
8	.4222		.2988
9	.3471		.2090
10	.2057		.3059
11	.2262		
12	.3554		
13	.2855		
14	.4323		
15	.2536		
Reliability Coefficient for Entire Rater Group	.2555	.3739	.2053

TABLE XI

NONVERBAL BEHAVIOR MEAN FREQUENCIES
BY AGE AND SEX

Category	Four-Year-Olds	
	Male	Female
	Occurences	
	Frequency	Frequency
Habitual	41	40
Feeling Expression	73	99
Focusing Seeking	110	153
Initiating Positive	23	21
Initiating Negative	11	3
Movement Toward People	28	25
Pause	9	6
Task Oriented	30	18
Response Positive	40	36
Response Negative	9	11
Withdraw	21	13
Cannot Judge	6	9
TOTAL	401	434

Table XI, continued

Category	Five-Year-Olds	
	Male	Female
	Occurences	
	Frequency	Frequency
Habitual	66	19
Feeling Expression	93	72
Focusing Seeking	115	143
Initiating Positive	27	20
Initiating Negative	9	9
Movement Toward People	28	27
Pause	6	7
Task Oriented	18	15
Response Positive	44	42
Response Negative	14	26
Withdraw	22	13
Cannot Judge	12	19
TOTAL	454	418

Table XI, continued

Category	Six-Year-Olds	
	Male	Female
	Occurences	
	Frequency	Frequency
Habitual	37	40
Feeling Expression	78	75
Focusing Seeking	144	127
Initiating Positive	19	23
Initiating Negative	2	2
Movement Toward People	13	15
Pause	7	1
Task Oriented	22	13
Response Positive	41	41
Response Negative	4	2
Withdraw	13	14
Cannot Judge	8	6
TOTAL	388	358

recorded very infrequently for all groups. Negative behavior (Initiating Negative and Response Negative) varied considerably with age and sex. It was observed fairly frequently for the four-and five-year-olds, although the four-year-old girls showed very little Initiating Negative Behavior. However, for six-year-olds of both sexes, Negative Behavior was practically nonexistent.

The occurrence of nonverbal behaviors was also analyzed using COSAN (Classroom Observation System Analysis), a general program for the compilation of data from classroom observation systems.[3] The average percentage of total occurrences for each nonverbal behavior category was computed by the program. The results are presented in summary form in Table XII. (Data for individual subjects are on file and available through the University Nursery-Kindergarten.) The information in Table XII parallels that in Table XI discussed above. Table XI was included in this chapter to allow direct comparison between the results of this study and the Pilot Study as reported in Chapter Four. Data on the average percentage of total occurrences of each nonverbal behavior category as presented in Table XII are arranged according to age and sex of the subjects. The cross-cultural data are also included with the data on the general population.*

The effects of sex and age on the nonverbal category distribution are among the more important findings in Table XII. The categories

---

[3]Thomas B. Gregory, A Computer Program for the Compilation of Data from Classroom Observation Systems Having Mutually Exclusive Categories, Bloomington: Indiana University, no date available.

*Additional cross-cultural data not analyzed by COSAN are presented later in this chapter in the section headed, What Cross-cultural Differences Exist in the Nonverbal and Decision-Making Behaviors?

TABLE XII

AVERAGE PERCENTAGE OF TOTAL OCCURRENCES OF EACH NONVERBAL BEHAVIOR CATEGORY ACCORDING TO AGE AND SEX*

Category	Four-Year-Olds		
	Male	Female	Total
Habitual	10.1	9.2	9.65
Feeling Expression	16.8	21.9	19.35
Focusing Seeking	30.3	32.9	31.6
Initiating Positive	5.8	5.0	5.4
Initiating Negative	2.2	4.4	3.3
Movement Toward People	7.4	5.8	6.6
Pause	2.4	2.9	2.65
Task Oriented	6.6	6.1	6.35
Response Positive	10.6	8.6	9.6
Response Negative	2.2	2.6	2.4
Withdraw	5.0	3.3	4.15
Cannot Judge	1.3	2.0	1.65

*These data were analyzed by using COSAN (Classroom Observation Systems Analysis).

Table XII, continued

Category	Five-Year-Olds		
	Male	Female	Total
Habitual	10.5	5.1	7.8
Feeling Expression	22.1	17.7	19.9
Focusing Seeking	25.7	33.0	29.35
Initiating Positive	6.2	5.4	5.8
Initiating Negative	1.1	2.2	1.75
Movement Toward People	6.5	6.7	6.6
Pause	1.3	1.9	1.6
Task Oriented	5.3	4.6	4.95
Response Positive	10.2	10.2	10.2
Response Negative	3.1	5.9	4.5
Withdraw	5.9	3.0	4.45
Cannot Judge	2.7	4.6	3.65

Table XII, continued

Category	Six-Year-Olds		
	Male	Female	Total
Habitual	10.0	11.8	10.9
Feeling Expression	25.1	21.2	23.15
Focusing Seeking	33.7	34.7	33.85
Initiating Positive	4.9	6.8	5.85
Initiating Negative	.4	.4	.4
Movement Toward People	3.8	4.0	3.9
Pause	1.9	-	.95
Task Oriented	6.2	3.5	4.9
Response Positive	11.2	11.4	11.3
Response Negative	1.0	.9	.95
Withdraw	3.9	3.9	3.9
Cannot Judge	1.8	1.7	1.75

Table XII, continued

Category	Indian Children		
	Male	Female	Total
Habitual	8.2	10.5	9.35
Feeling Expression	20.0	27.1	23.55
Focusing Seeking	31.0	35.7	18.35
Initiating Positive	4.3	5.6	4.95
Initiating Negative	3.2	.3	1.75
Movement Toward People	4.7	5.6	5.15
Pause	2.4	-	1.2
Task Oriented	6.0	3.2	4.6
Response Positive	9.4	9.1	9.25
Response Negative	5.3	.3	2.8
Withdraw	4.9	2.1	3.5
Cannot Judge	2.2	.5	1.35

most effected by sex are Feeling Expression, Focusing Seeking Behavior, Initiating Positive, and Task Oriented. Girls in the five- and six-year-old groups showed less Feeling Expression behaviors than the boys, although the reverse was true for the four-year-olds. As a group, the girls showed a higher percentage of Focusing Seeking Behavior than did the boys, but the boys showed more Initiating Positive behaviors than the girls except for the six-year-olds. In Task Oriented behaviors the boys exhibited more than girls in all three age groups. Other differences in distribution were also found but were not as noticeable or as consistent as those mentioned above.

The nonverbal behavior categories which were effected most by age differences were Initiating Negative, Movement Toward People, Pause, Response Positive, and Response Negative. Four-year-olds showed the most Initiating Negative Behavior and six-year-olds showed the least. In the category Movement Toward People, the six-year-olds showed less than either of the other two age groups, and Pause was more frequent among the four-year-olds. Response Positive increased directly with age so that four-year-olds showed the least percentage of these behaviors and six-year-olds the greatest. Response Negative was highest among the five-year-olds.

The data from the Indian children also indicated some differences in distribution. For the Indian children, there was a lower percentage of Focusing Seeking Behavior, also a lower occurrence of Initiating Positive Behavior .

Frequency of Nonverbal Behaviors as Related to Personal Interactions

For each of the three age groups, and within each age for boys and girls, the relation of the nonverbal behavior category to personal interaction was examined. The frequency with which interaction with a peer, a group, a teacher, or a student teacher accompanied a particular behavior on the part of the child is shown in Table XIII.

The five-year-old girls showed many more personal interactions than did the boys although the reverse was true for the other age groups. In all cases the greatest number of interactions occurred with an individual peer.

Discussion. In all groups the Focusing Seeking Behavior was recorded in association with a personal interaction more frequently than any other category. It should be noted, however, that this was the category recorded most frequently in total and the high number of personal interactions may simply indicate the proportionately greater frequency of use of this category as a whole. The category which correlated with personal interaction most highly after Focusing Seeking Behavior was Response Positive. This was true for almost all groups and with almost all possible personal interactions. That is, for each age group, of the possible categories, Focusing Seeking and Response Positive correlated most highly with a personal interaction. This is due in part to the nature of the behaviors themselves; Response Positive, by definition must involve another person. However, there are other categories such as Initiating Positive, Initiating Negative, or Movement Toward People which are defined in terms of involving other people and did not show this high number of personal interactions. Other categories

TABLE XIII

RELATIONSHIP OF NONVERBAL BEHAVIOR CATEGORY TO PERSONAL INTERACTION STATED IN MEAN FREQUENCIES

Category	Four-Year-Olds							
	Male				Female			
	Peer	Group	Teacher	Student Teacher	Peer	Group	Teacher	Student Teacher
Habitual	-	-	-	-	-	-	-	-
Feeling Expression	-	-	1	-	1	1	-	1
Focusing Seeking	25	30	18	6	20	11	8	10
Initiating Positive	11	1	7	5	12	2	3	5
Initiating Negative	10	-	-	-	4	-	-	-
Movement Toward People	5	8	6	2	5	9	4	5
Pause	-	-	-	-	-	-	-	-
Task Oriented	1	-	-	-	1	2	1	1
Response Positive	11	1	1.6	5	.12	2	5	20
Response Negative	5	-	3	-	6	1	1	5
Withdraw	1	-	-	-	-	-	-	-
Cannot Judge	-	-	-	-	-	-	-	-
TOTAL	69	40	51	18	61	28	22	47

TABLE XIII (cont.)

Category	Five-Year-Olds							
	Male				Female			
	Peer	Group	Teacher	Student Teacher	Peer	Group	Teacher	Student Teacher
Habitual	-	-	-	-	-	-	-	-
Feeling Expression	7	1	1	-	4	4	-	-
Focusing Seeking	21	25	18	7	62	33	18	22
Initiating Positive	9	4	5	4	12	1	1	2
Initiating Negative	3	1	-	-	8	-	-	1
Movement Toward People	8	8	3	2	9	11	5	3
Pause	-	-	-	-	-	-	-	-
Task Oriented	3	1	-	1	-	-	1	-
Response Positive	16	3	14	7	24	3	6	7
Response Negative	6	1	2	2	17	2	2	3
Withdraw	-	-	-	-	-	-	-	-
Cannot Judge	-	-	-	-	-	-	-	-
TOTAL	73	44	43	23	136	54	33	38

Category	Six-Year-Olds							
	Male				Female			
	Peer	Group	Teacher	Student Teacher	Peer	Group	Teacher	Student Teacher
Habitual	-	1	-	-	-	-	-	-
Feeling Expression	-	1	-	-	-	1	-	1
Focusing Seeking	42	53	19	7	29	30	12	16
Initiating Positive	10	3	4	3	13	1	4	5
Initiating Negative	2	-	-	-	2	-	-	-
Movement Toward People	-	3	1	1	2	9	2	1
Pause	-	-	-	-	-	-	-	-
Task Oriented	-	1	-	-	-	-	-	-
Response Positive	16	3	14	3	16	-	6	12
Response Negative	4	-	-	-	2	-	-	1
Withdraw	-	-	-	-	-	-	-	-
Cannot Judge	-	-	-	-	-	-	-	-
TOTAL	74	65	38	14	64	41	24	36

such as Withdraw, Cannot Judge or Pause, by definition could not involve other persons. The data supported the limitations of these categories.

What Nonverbal Behaviors are Associated with the Beginning, Middle, and End of the Decision-Making Continuum?

Category Frequency

This section reviews the relation between the nonverbal behavior categories and decision-making behavior. Since behaviors of less intent to more intent define the decision-making continuum, it was valuable to compare the behaviors which occurred at the beginning, the middle, and the end of this continuum. Table XIV ranks the nonverbal categories as they relate to the three points of the decision-making continuum. The ranking is based on the frequency for each category. The nonverbal behaviors corresponding to each of these three points varied and are discussed below.

Discussion. As shown in Table XIV, the greatest number of beginning points were observed in the category Task Oriented; the greatest number of middle points occurred in Focusing Seeking Behavior; and the greatest number of end points were observed in the category Withdraw. A presentation of the relation of nonverbal categories to the decision-making continuum based on percentages and frequencies is found in Appendix F.

What Sex and Age Differences Are Evident in Nonverbal Behaviors Associated with the Beginning, Middle, and End of the Decision-Making Continuum?

Tables XV and XVI present the relationship of the nonverbal categories to the points on the decision-making continuum. Table XV

TABLE XIV

RELATIONSHIP OF NONVERBAL BEHAVIOR CATEGORIES
TO THE BEGINNING, MIDDLE, AND END OF
THE DECISION-MAKING CONTINUUM STATED IN FREQUENCIES

Category	Decision-Making Continuum		
	Beginning	Middle	End
	Frequency	Frequency	Frequency
Habitual	8	5	6.5
Feeling Expression	5	3	3
Focusing Seeking	2	1	2
Initiating Positive	7	6	8
Initiating Negative	4	8	9
Movement Toward People	3	7	6.5
Pause	9.5	11	12
Task Oriented	1	2	5
Response Positive	6	4	4
Response Negative	11	9.5	10.5
Withdraw	9.5	9.5	1
Cannot Judge	12	12	10.5

*Rank of 1 indicates the greatest frequency of occurrence of that category with the given point in the decision-making process. Rank of 12 indicates that lowest number of occurrences of the category in relation to that point in the decision-making process.

presents the data by sex and Table XVI by age. Boys were observed in more decision-making behaviors, as defined in this study, than were girls. In other words, more nonverbal behaviors, at all points of the decision-making continuum, were recorded for boys than for girls. Five-year-olds showed more beginning, middle, and end behaviors of the decision-making continuum than either of the other two groups.

Discussion. The total number of nonverbal behaviors related to the beginning, middle and end of the decision-making continuum varied with sex and age. Although the total number of nonverbal behaviors associated with the points on the decision-making continuum varied with sex and age, the frequency with which specific categories were associated with designated points on the continuum did not. For example, even though the boys exhibited more decision-making behaviors than the girls, with both sexes, the beginning of the decision-making continuum corresponded most closely with the Task Oriented category; the middle of the decision-making continuum corresponded most closely to the Focusing Seeking Behavior (although in the last case, girls showed a slightly larger amount of Withdraw Behavior than the boys.) These data differ slightly from those in Table XIV which was based on total frequencies rather than mean frequencies. Mean frequencies were used since the number of boys and girls was not equal.

A similar situation existed when the results were compared with respect to age. Although there was considerable difference among the frequencies for each age group, the relation of decision-making behaviors to nonverbal behaviors was very similar. For all ages, the beginning point was most closely related to Task Oriented Behavior; the middle

TABLE XV

RELATION OF NONVERBAL CATEGORIES
TO DECISION-MAKING CONTINUUM
ACCORDING TO SEX STATED IN MEAN FREQUENCIES

Category	Decision-Making Continuum					
	Beginning		Middle		End	
	Male	Female	Male	Female	Male	Female
Habitual	1.0	-	.8	1.0	1.3	-
Feeling Expression	2.0	.4	-1.9	.8	1.9	1.4
Focusing Seeking	4.5	2.3	3.0	2.3	3.1	2.0
Initiating Positive	.6	.6	.8	.5	.9	.8
Initiating Negative	.4	.1	.3	.1	.4	-
Movement Toward People	3.5	1.0	.5	.5	.6	1.1
Pause	.3	.1	.3	-	-	.1
Task Oriented	7.5	4.6	1.5	1.4	1.0	.9
Response Positive	.8	.6	1.1	1.1	1.0	1.5
Response Negative	-	.1	.3	.1	.1	.1
Withdraw	.3	.1	.3	.1	2.6	2.5
Cannot Judge	-	-	-	.1	.1	.1

TABLE XVI

RELATION OF NONVERBAL CATEGORIES
TO DECISION-MAKING CONTINUUM
ACCORDING TO AGE STATED IN MEAN FREQUENCIES

Category	Decision-Making Continuum								
	Beginning			Middle			End		
	Age			Age			Age		
	4	5	6	4	5	6	4	5	6
Habitual	.3	1.4	-	1.6	-	.8	1.0	1.0	.5
Feeling Expression	1.5	1.6	.3	1.3	1.4	1.3	1.3	2.2	1.5
Focusing Seeking	2.7	4.8	3.3	1.6	4.0	2.8	2.3	3.4	1.8
Initiating Positive	.5	1.0	.5	.3	1.2	.5	.7	.6	1.3
Initiating Negative	.3	3.4	.3	.3	.8	-	.5	1.0	-
Movement Toward People	2.0	3.6	1.0	.7	.6	-	.8	1.4	.3
Pause	.1	.4	-	.1	-	.3	-	.2	-
Task Oriented	6.0	8.0	3.8	1.5	1.2	1.8	1.0	.8	1.0
Response Positive	.1	1.2	1.0	.5	2.2	1.0	.7	1.6	1.8
Response Negative	-	.2	-	-	.6	-	.1	.2	-
Withdraw	.1	.2	.3	-	.4	.3	.8	5.8	1.0
Cannot Judge	-	-	-	-	.2	-	.1	.2	-

to Focusing Seeking Behavior and the end to Focusing Seeking Behavior (except for the five-year-olds who exhibited more Withdraw Behaviors at the end point.)

What Personal Interactions by Sex and Age are Evident at the Beginning, Middle, and End of the Decision-Making Continuum?

Tables XVII, XVIII, and XIX show the relation of personal interaction to the decision-making continuum as it varied with sex and age. Table XVIII is a summary and does not include sex and age. The table shows that the greatest number of decision points recorded was beginning ones, and of these half occurred without any personal interaction. It was at the middle point of the decision, as defined in this study, that more nonverbal behaviors occurred related to decision behaviors in interaction with another person. At all three points of the decision continuum, interaction with peers, individually or in a group, occurred more frequently than interaction with a teacher or student teacher.

Discussion. Table XVIII shows the variation between boys and girls. Contrary to the Pilot Study, in the Principal Study, more decision-making behaviors were engaged in by the boys than the girls. At all points along the decision-making continuum, except at the middle point for girls, more decision behaviors occurred alone or correlated with no other personal interaction. Of the interactions recorded, the most frequent was with an individual peer.

The variation in age is shown in Table XIX. The six-year-olds engaged in considerably less decision-making behaviors than did either of the other two groups. The six-year-olds also exhibited almost the same number of decision-making behaviors when they were alone or with

TABLE XVII

MEAN FREQUENCIES OF PERSONAL INTERACTION
TO POINTS ON THE DECISION-MAKING CONTINUUM

Personal Interaction	Decision-Making Continuum			Total
	Beginning	Middle	End	
No One	106	47	75	228
Peer	57	51	43	151
Group	45	29	29	103
Teacher	27	15	24	66
Student Teacher	15	8	20	43
	250	150	191	591

TABLE XVIII

FREQUENCY OF PERSONAL INTERACTION TO POINTS ON THE DECISION-MAKING CONTINUUM ACCORDING TO SEX

Points on Decision-Making Continuum	Personal Interaction	Male	Female
Beginning	No One	69	37
	Peer	40	17
	Group	30	15
	Teacher	21	6
	Student Teacher	11	4
Middle	No One	28	19
	Peer	27	24
	Group	15	14
	Teacher	13	2
	Student Teacher	4	4
End	No One	49	26
	Peer	26	17
	Group	14	15
	Teacher	12	12
	Student Teacher	9	11

TABLE XIX

MEAN FREQUENCIES OF PERSONAL INTERACTION TO POINTS ON THE DECISION-MAKING CONTINUUM ACCORDING TO AGE

Point on Decision-Making Continuum	Personal Interaction	Age		
		4	5	6
Beginning	No One	59	36	11
	Peer	21	24	12
	Group	18	17	10
	Teacher	11	9	5
	Student Teacher	5	9	1
Middle	No One	22	9	16
	Peer	23	20	8
	Group	8	15	6
	Teacher	6	7	2
	Student Teacher	4	3	1
End	No One	24	47	4
	Peer	23	11	9
	Group	15	9	5
	Teacher	13	4	5
	Student Teacher	16	2	2

individual peers. The four- and five-year-olds engaged in many more decision-making behaviors alone than with others.

What Cross-cultural Differences Exist in Nonverbal and Decision-Making Behaviors?*

Since the Nursery-Kindergarten has a number of children from other lands, including several Indians, a comparison was made between the behaviors of the five children of Indian parentage and the behaviors of the children of the general population. Tables XX, XXI, XXII present the data for the Indian children. It should be kept in mind that any interpretation must be tentative because of the small sample.

The sample of Indian children was composed of four boys and one girl; the boys were all four years old and the girl was five years old. Each table is discussed separately. A comparison is made in the text with relevant information from the previous sections.

What is the Frequency with which Various Nonverbal Behaviors Occur during Free Play?

Table XX gives the mean number of times each nonverbal behavior category was recorded for both sexes of the Indian population. More nonverbal behavior categories were recorded for the girl than the boys, and for both groups Focusing Seeking Behavior and Feeling Expression Behavior were the first and second most frequently observed categories. Habitual was third for the girl and Response Positive third for the boys.

---

*Cross-cultural data analyzed by COSAN are found earlier in the chapter in the section headed, What is the Frequency with which Various Nonverbal Behaviors Occur during Free Play?

TABLE XX

NONVERBAL BEHAVIOR MEAN FREQUENCIES
AMONG INDIAN CHILDREN BY SEX

Category	Male	Female
Habitual	25	39
Feeling Expression	50	101
Focusing Seeking	98	152
Initiating Positive	13	21
Initiating Negative	9	2
Movement Toward People	14	21
Pause	8	-
Task Oriented	18	13
Response Positive	29	34
Response Negative	11	-
Withdraw	15	8
Cannot Judge	7	2
TOTAL	297	393

Discussion of Data on the Indian Children with Comparable Data on the General Population

It is most appropriate to compare these data with their respective age groups; that is, the observational data on the boys with those of four-year-old boys and the observational data on the girls with those of the five-year-old girls. For the boys, the most striking difference is in the total figure: the Indian boys showed fewer numbers of categories of nonverbal behavior than did boys of the general population. Within these totals, however, the proportions were fairly similar. The Indian boys showed slightly less initiating behavior (Initiating Positive and Initiating Negative) than did the boys in the general population. For the Indian girl, the situation was somewhat different. The actual totals were very close to those of five-year-old girls in the general population, but the girls showed less Habitual Behavior and more Response Negative Behavior than did the Indian girl.

Frequency of Nonverbal Behaviors as Related to Personal Interactions

The mean frequencies with which interaction with a peer, a group, a teacher or a student teacher accompanied a particular nonverbal behavior on the part of the Indian boys and girl are shown in Table XXI. The mean total of personal interactions recorded for the girl was larger than that recorded for the boys. The sexes also differed in the nature of these personal interactions. The girl interacted the greatest number of times with the group and the boys with a peer. For both sexes, the Focusing Seeking Behavior was recorded in association with a personal interaction much more frequently than any other category.

TABLE XXI

MEAN FREQUENCIES OF PERSONAL INTERACTION TO NONVERBAL BEHAVIOR AMONG INDIAN CHILDREN

Category	Male				Female			
	Peer	Group	Teacher	Student Teacher	Peer	Group	Teacher	Student Teacher
Habitual	-	-	-	-	-	-	-	-
Feeling Expression	1	-	-	1	-	-	-	-
Focusing Seeking	29	19	15	6	31	73	17	12
Initiating Positive	8	1	-	-	6	-	-	-
Initiating Negative	7	1	2	1	1	5	-	5
Movement Toward People	2	8	2	1	5	11	4	6
Pause	-	-	-	-	-	-	-	-
Task Oriented	-	2	-	-	-	-	-	-
Response Positive	12	1	10	3	5	1	2	13
Response Negative	5	-	3	2	-	-	-	-
Withdraw	-	-	-	-	-	-	-	-
Cannot Judge	1	-	-	-	-	-	-	-
TOTAL	65	32	32	14	48	90	23	36

Discussion of Data on the Indian Children with Comparable Data on the General Population

When the data on the Indian children were compared and those of the appropriate groups for the general population, the following differences were apparent: For the boys, the number of personal interactions was comparable; however, there were far fewer interactions with the teacher on the part of the Indian boys than the boys of the general population. The girl showed a total of fewer personal interactions, and although there were proportionately more interactions with a group, there were fewer with the teacher or with an individual peer.

What Nonverbal Behaviors are Associated with the Beginning, Middle, and End of the Decision-Making Continuum?

Table XXII shows the mean frequencies for each behavior category corresponding to the decision-making continuum. This presentation facilitates the comparison of behavior categories occurring at the beginning, middle, and end of the continuum. The greatest number of beginning points was observed in the category Task Oriented; the greatest number of middle points occurred in the Focusing Seeking category; and the greatest number of end points in Feeling Expression.

Discussion of Data on the Indian Children with Comparable Data on the General Population

Although the distributions according to these categories for the Indian population were comparable to those of the general population, the Indian children as a group engaged in fewer decision-making behaviors.

TABLE XXII

RELATION OF NONVERBAL BEHAVIOR CATEGORIES TO POINTS ON THE DECISION-MAKING CONTINUUM AMONG INDIAN CHILDREN (MEAN FREQUENCIES)

Category	Beginning	Middle	End
Habitual	-	.8	.2
Feeling Expression	.2	1.0	1.4
Focusing Seeking	2.0	1.6	.4
Initiating Positive	.2	.2	.2
Initiating Negative	.2	.6	.8
Movement Toward People	.6	.6	.4
Pause	-	.2	-
Task Oriented	6.8	1.0	1.2
Response Positive	.2	1.4	.4
Response Negative	.2	-	.4
Withdraw	.8	.2	1.0
Cannot Judge	.2	-	-

Summary

Chapter Five contains a review of the Principal Study. The data are treated in response to the research questions. The latter part of the chapter contains data on a group of Indian children who were studied separately for cross-cultural purposes.

The last chapter contains recommendations and implications from the study for curriculum development and teacher education.

CHAPTER SIX

RECOMMENDATIONS AND IMPLICATIONS BASED ON FINDINGS AND OTHER ACTIVITIES ASSOCIATED WITH THE STUDY

The study which has been reported was the cooperative effort of a large number of persons. Individuals, particularly graduate students, contributed to the study in a variety of ways--by assisting in its conceptualization, by gathering data, by reviewing literature, and by brainstorming with the principal researchers on the implications of the major themes for curriculum development and teacher education. It should be kept in mind that the brainstorming sessions were conducted simultaneously with data gathering and other aspects of the project. Therefore, ideas in the brainstorming sessions came about as a result of the observation of children, thinking about the central ideas, and extending the first two points into curriculum development and teacher education.* Most of the graduate students who assisted in the project were not available after the data had been analyzed.

This chapter contains much of their analysis of the broader issues under consideration as well as certain specific questions and implications which the data seem to suggest. The analysis of the data bears further work, and other persons are invited to derive implications both from the data reported and that on file in the office of the Nursery-Kindergarten.

*Minutes of the Brainstorming Sessions in Appendix G contain further information on topics discussed in this Chapter.

The chapter is divided into two parts. The first section deals with recommendations for improving procedures of the study. The second section deals with implications and recommendations derived from the study for aspects of curriculum development and teacher education.

Recommendations for Improving Procedures in Future Research Studies

The recommendations which follow are related to observation and tallying procedures and to the training sessions for observers.

Observation and Tallying Procedures. In both the Pilot Study and the Principal Study observations were scheduled on the basis of a single child per observer. For future studies, a team of observers for each child seems advisable. The simultaneous use of a directed case study with the Nonverbal Behavior Category System is suggested, with one team member conducting the case study at the same time another team member is coding utilizing the Nonverbal Behavior Category System. Coordinating the information from both the check sheet and the case study would increase the amount of data as well as contribute to a more rigorous analysis of data. The directed case study could serve as supporting information for the check sheet.

Using a team approach, reliability could be established within teams rather than within the total group of observers. A more complete analysis of the data could be accomplished if the interaction with peers were recorded as male and female, i.e. $\frac{\text{Peer}}{\text{M} \mid \text{F}}$. Continuous observations of the same child appear necessary, particularly in terms of recording beginning-middle-end aspects of decision making. The observation schedule should be arranged to include overlaps so as not to lose data.

Three changes in tallying might assist in the procuring of accurate and penetrating data. First, the observations of the decision-making

process ought to be made by a second observer. These observations might be conducted simultaneously but separate from the recording of nonverbal behaviors. Under the present system, observers recorded nonverbal behaviors and then went back and indicated whether the behavior was a beginning, middle, or end one as it related to the decision-making process.

Second, under present procedures, an attempt was made to record other behaviors taking place during Task Orientation. It may have been in the tabulating that the simultaneous behaviors were not given adequate attention. A plan needs to be developed to give sufficient consideration to what is taking place during the behavior Task Orientation.

This leads to the third recommendation. The tally sheet, in the future, should enable the recording of smaller decisions taking place within the larger decision. For example, under the existing system, an observer would record the movement to the block corner, the building with blocks, and the movement from the block corner as one decision. Yet, many smaller decisions need to be made as the child builds. What size blocks are most appropriate for what is to be constructed? What should be done if part of the construction falls? With whom should the child build? To whom should he look for advice if he needs "expert" help? What other materials beside blocks will he need to carry out his plans?

Nonverbal Behavior Category System. In addition to the comments made earlier about refining the procedures for capturing the complexities of the decision-making process, perhaps the Nonverbal Behavior Category System should be expanded to include motor development skills which might help to differentiate overt, intentional decisions from automatic responses.

The Nonverbal Behavior Category System lacks a category for coding movement other than Withdrawal and Movement Toward People. There does not

seem to be any way to categorize movement of a random type. Also, it appears that children engage in minor activities, to fill time or as an interim activity, which are not task oriented. There should be some way to record these activities.

Focusing Seeking Behavior denotes a very broad category. A differentiation between Focusing and Seeking Behavior should be made. A time element, i.e. eye contact for x seconds, introduced into the coding system would facilitate recording this category.

Training Sessions. Following the suggestion of using a team of observers, the training sessions should be arranged to train a team, and have the team begin gathering data immediately, while another team is being trained. A time lapse between the training sessions and the actual data gathering seems to cut down on the efficiency of the observer. A lapse of time between observations has the same effect. A concentrated training session, followed immediately by data gathering in the classroom on successive days is preferred. Observers felt improvement came with practice, but in cases where there was a lapse of ten days between observations the likelihood of forgetting was great.

Implications

Curriculum Development

As more knowledge of children's responses in a classroom setting becomes available, application of this knowledge can determine curriculum changes and modifications. Recommendations for curriculum development are considered in the areas of decision making, free play, nonverbal communication, and cross-cultural dimensions.

Decision Making. Although decision enters into all facets of life and although the data indicate that young children do make many decisions, nonetheless to find a workable definition for a research study involving young children was difficult. Two considerations had a bearing on the study: (1) Decision making is an internal process and therefore does not easily lend itself to study through the analysis of observable behavior; (2) Since decision making is a learned process, even though for most persons it is intuitively acquired, it means that only the rudimentary levels of the process can be studied in young children. A need exists to investigate further the rudiments of decision.

Teachers need to join in the search for an adequate conceptualization of decision making in young children. First, the problem of intent needs further consideration. Because of the problems of determining what can be observed of the decision-making process in young children, the earlier studies on decision defined it as a change in activity, or accepting or rejecting a new direction. For this study the definition included the concept of intent based on a continuum of behavior of little intent to much intent. The assumption was that less intent was evident in pre-decision behaviors than in end-of-decision behaviors. This assumption needs to be explored in more detail. Might a child not come to school determined to do a particular puzzle or to use blocks in a specific way? Such a purpose on the part of the child is adequately covered in the Nonverbal Behavior Category System, for these illustrations would be categorized Task Orientation; however, the definition is inadequate to describe variation in intent. The definition needs a way of describing strong intent at the beginning of a task followed by waivering of intent when the task becomes difficult or uninteresting.

Furthermore, the definition lacks adequate attention to the place of the affective in decision. Feeling, impluse, intuition, and affect--overlapping terms--need attention as they relate to decision.

A concept of decision must account for the child's being allowed to reject what earlier has been decided. In other words, the child needs to examine what is involved in turning his back on what he has earlier initiated. Only in this way can a child become a risk taker. If there is no turning back, a child is apt to make decisions in which chances of failure are severely minimized, He then cuts off the opportunity to learn from failure as well as success.

Aspects of classroom management need to be considered if decision making is to become a critical element of the curriculum. First, attention should be given to the place of challenge in learning activities. What activities invite children to be risk takers? Consideration might be given to nonpunitive ways of handling failure if children are to participate wholeheartedly in a curriculum which offers a large degree of challenge and risk.

Second, if challenge and far-reaching decisions are prized, attention should be given to making easily management decisions such as distributing paper, turning out lights, passing from one part of the building to another. In this way more resources can be conserved for attention to decisions which have meaning for the child. Teachers need to understand how to verbalize with children, after they have experienced aspects of the decision-making process, some of the learnings they are acquiring about challenging and management decision.

Third, teachers can teach decision making through providing a variety of self-selective activities to afford children ample opportunity to make

choices on their ability and interest levels. A means should be established to ascertain a child's level of functioning in the decision-making process so that the child has opportunity to reach new levels.

Fourth, classrooms can be arranged to facilitate decision making. The data indicate that peer influence is great; therefore, learning activities can be arranged to enhance this influence. As individual children express particular interest in a topic or activity or reveal knowledge on a certain subject, they might assume responsibility, with the help of the teacher, for setting up an area of interest on that topic. The child involved might be the resouce person in the classroom for information on that topic.

If a program of curriculum development gives attention to decision making, then consideration should be given to the kinds of decisions that children are able to make, how they verbalize about their decisions, and the compromises they make when several good choices are impinging on their time for attention.

Free Play. An ideal facet of programs for young children for establishing the setting for children to learn decision making is in that part of the program ordinarily called free play.

Free play needs to be carefully defined. The term free play is misleading and confusing, for in most nursery schools and kindergartens children do not have complete freedom, nor should they. Choice time might be a more descriptive term for the period of the day in which children choose the activity or materials with which they will become involved.

Choice time is an opportunity for children to make choices, if alternatives are available. Choice time involves structuring the environment by providing materials from which a child can choose those things he is ready to learn.

Free play or choice time is that period of the day when the child begins to develop his creative and cognitive thinking skills and begins to know the difference between the two.

The teacher has a significant role during free play. The teacher's role is to establish a setting or to put into the environment materials that are consistent with the child's pattern of learning. The materials the teacher makes available and the arrangement of these materials partially determine the choices children make. The teacher's responsibility is to observe the children and know at what level each child is functioning so that materials and alternatives can be provided for the child to progress.

The teacher also decides the kind of knowledge she wishes to develop, either by helping a child clarify his personal knowledge, or by introducing the established knowledge of the culture to the child. This may determine the way she talks to the children and the kinds of materials made available to them. At some point the child should begin to become aware that certain activities help him stretch his imagination and others help him focus in upon established knowledge.

Free play is an opportunity for socialization among peers. The child may elect to be with a group, or the teacher, one other child, or alone. A child has a choice whether to interact with others about specific content or whether to interact with others in open, free discussion. A child can spend time initiating positive responses or negative responses from others. He can move toward people, away from people, or withdraw completely.

The child can decide whether to utilize territory alone or with others. He may spend his time focusing upon an object, a person, or situation or he may spend his time searching for something that catches his imagination. If a number of individualized learning stations is

available to children, a child probably makes more decisions in terms of content and activity than in relation to people. On the other hand, if many opportunities are presented which involve group endeavors, the child may focus upon with whom to play and how they will play together.

Free play or choice time might be extended to include other aspects of the program. Traditionally, free play has been considered as a block of time in the daily schedule. It might be more efficacious to devote an entire morning to it to provide opportunities for wider choices, for completion of projects without interruption, or for more opportunity for children to structure their own time. Activities, such as music and story time, which are generally conducted as total group activities, might become choice time activities in the form of learning stations. Greater opportunity for individualization and choices within the ability level of children might be provided with multi-age grouping in classrooms.

Teaching and learning need careful consideration during free play. When choice time or free play is viewed as a teaching-learning experience, a difference exists between what is learned and what is taught. Learning may take place when a child manipulates materials, when he talks with a peer or teacher, or when he finds an answer to a question. Learning involves assimilation, adaptation, and utilization of knowledge.

The most important types of teaching during free play are of two kinds. The first kind involves opening things up so that the child wishes to explore new areas--with materials and things. The second type is a follow-up of the first and involves helping the child consolidate and fit things together. The opening and closing aspects of teaching are critical to free play.

Considering these aspects on a continuum, teaching takes place at both ends, while learning runs through the entire spectrum. The largest

part of the learning occurs within the child on the basis of his discoveries and interactions.

Nonverbal Behavior. Perhaps the greatest contribution of this study is the Nonverbal Behavior Category System which was developed as part of the project and upon which the research efforts were based. Serious readers of the study are advised to examine the Nonverbal Behavior Category System carefully to see whether indeed the categories do describe the nonverbal behaviors of young children. Which categories give a picture of the child as he goes about his work and which are indeed irrelevant to behaviors which the child exhibits in school? Which ones give clues worth pursuing as to next curricular experiences? Are some of the categories too broadly defined? Are some too narrow?

For example, consider the category Feeling Expression. What does a teacher need to know about a child's feeling as the teacher plans appropriate learning opportunities for him?

The category Pause had relatively few responses. Why do children continue to go about their tasks in an active manner? Does the child of his own volition decide to engage continually in active rather than contemplative activities? Or is the feeling that a pause is not worthwhile imposed by the teacher and the culture?

The category Task Orientation was one which was frequently used. What do children tend to do when they are absorbed in a task? What nonverbal cues indicate when the child is having difficulty? when he is ready to move on to another task?

Initiating Behavior-Negative and Responsive Behavior-Negative had relatively few tallies at all ages and these decreased as children became

older. What accounts for the relatively small amount of negative nonverbal behaviors? Have children learned to use words so that an analysis of verbal behavior might capture what was missed in nonverbal tallies? Do children have few negative feelings? Or have they learned to suppress and repress negative feelings by the time they are three- or four- or five-years old? If so, in what ways do such feelings show themselves? What clues not included in the Nonverbal Behavior Category System would better help us understand negative behavior so that appropriate learning experiences can be planned to help a child examine the behavior of himself and others?

Cross-cultural Aspects. A small number of Indian children were studied in the Principal Study utilizing the Nonverbal Behavior Category System. The results were compared with the general population. Because of the small sample, the results of this part of the study can only be held as tentative.

The setting in which the study took place has children from many different lands. A major purpose of the school is to help children respect the similarities and differences of each other. It seemed appropriate therefore to see what nonverbal similarities and differences exist. Do Indian children tend to make more or fewer decisions than the general population? What nonverbal behaviors do they tend to exhibit and which ones do they not seem to show?

A major problem in a very mobile world is that persons cannot be expected to master the many languages to which they might be exposed in a lifetime. Such being the case, what shortcuts can children acquire so that they can communicate with those whose native tongue is different from their own? It would appear that if children learn to read the facial expressions and gestures that persons from various cultures use, they are

well on the way to establishing some means of communicating with them. The implications suggest that school programs should provide opportunities for looking at another person as well as listening to him.

Some fundamental questions must be given attention if children are to learn to read nonverbal cues of persons from other cultures. What patterns of nonverbal behavior are common to a culture or country? What happens to children when they are placed in a setting of children representing diverse cultures? Do they lose the distinquishing aspects of their nonverbal behavior? How much attention should be given within school programs to helping children preserve their native culture and how much emphasis should be placed upon the attempt to achieve homogeneity of thinking, feeling, and acting?

The understanding of nonverbal communication is critical to curriculum development. How shall teachers be prepared so that they are equipped to utilize information about nonverbal behavior and its relation to decision making?

Teacher Education

One of the aspects of teacher preparation which is especially emphasized in working with young children is the importance of knowing children as individuals, and using this knowledge as a basis for planning activities for children.

The study accentuated the importance of a child's nonverbal behavior as a means of communication in the classroom. If teachers are to respond sensitively to children, they must be alert to the nonverbal cues of children, and be able to interpret the meaning of the cues as they relate to particular children. Teacher education programs, therefore, should provide opportunities for pre-service students to become sensitive to nonverbal

behavior and to be able to interpret that behavior so that they can develop a repertoire of appropriate responses to children.

In-service programs may be necessary so that experienced teachers have opportunities to develop new skills or increase present skills in recognizing and assessing nonverbal behavior as a means of communication, particularly as a facet of the decision-making process.

The organization of this section parallels that of the previous one. Discussion therefore focuses on decision making, free play, nonverbal communication, and cross-cultural dimensions.

Decision Making. We cannot expect teachers to prize decision making in others if they have never had the opportunity to participate to any great extent in decisions concerning their own education.

If wise decision making is considered important, the teacher-to-be should have the chance to be involved in the planning of his own program of teacher preparation. In addition to participation in decision making in planning the total program the teacher-to-be should have opportunity to determine how he will gain competence in a given area within the program. The teacher, then, has the chance to look at the decision-making process in a realistic way and to develop his own skill in this important process.

Teachers of all levels of experience need to be aware that decisions always have their consequences. Following one course of action may mean more critical consequences than following another. If teachers select to deviate from the norm, they need to develop two kinds of awareness: (1) The path ahead may be very unclear, and, (2) psychological stamina is oftentimes needed to cope with the consequences of a non-repetitive decision.

For example, many schools have documents which to some degree prescribe what is to be taught. Teachers have the option of following

carefully the prescribed curricula, of deviating from it in knowing and systematic ways, and of deviating from it in unplanned ways. Each course of action has its consequences. Teacher education programs should prepare teachers to handle the consequences of deviation as well as to follow the established course.

Teacher education programs need to prepare persons to make wise decisions in areas characteristic of today's changing educational milieu. For example, what kinds of alternatives should be considered in working in an "open space" school? How does the teacher prepare himself to work with other adults on a "team"? How does the teacher prepare himself to work with a child whose background is different from his own?

If the assumptions underlying the study are accepted, then teacher education programs must be examined so that teachers emerge highly sophisticated in the critical life process of decision making.

Nonverbal Behavior. Underlying this study is the assumption that one of the most critical tools teachers should possess is the ability to read the nonverbal cues of children. Although some teachers may have learned intuitively to observe children closely in order to plan appropriate experiences for them, most teachers can profit by learning to view children through an instrument such as the Nonverbal Behavior Category System or even through utilization of the case method.

A variety of means should be utilized in helping teachers utilize the Nonverbal Behavior Category System. For example, teachers might take only two or three categories at one time and attempt to find as many examples as possible that illustrate the category. Or, teachers might observe clusters of behaviors, or see what category immediately precedes and follows a category, such as Task Orientation.

Teachers might wish to explore the many ways children express feeling. How might the Feeling Expression category be subdivided? What should teachers do once they have observed the many ways children show their feelings? Given a similar situation in the classroom, how do three different children respond? How can children be helped to read the nonverbal cues their classmates send out and to respond appropriately?

If we accept the assumption that it is important for teachers to understand the nonverbal behavior of children, when and where should teachers-to-be start gaining competence in a systematic way? What kind of setting best lends itself to children's showing a wide range of nonverbal behaviors and to teachers' having freedom to utilize construcitvely what they see?

The statement was recently made that teacher education programs should give students increased responsibility for their own education. Simultaneous with such freedom for planning must go experiences for students to assume responsibility for examining closely what is happening. Preparing teachers to "read" the nonverbal behavior of other persons is a major step in helping teachers gather the data they need in order to make wise decisions for establishing a climate for learning.

Free Play. The data indicate that children have more contact with peers than with adults while engaging in decision making behavior. This means that teachers need to learn that their task is to establish the setting where children can interact with each other in worthwhile ways.

Teacher education might provide many opportunities for teachers to become environment establishers, facilitators and organizers rather than only dispensers of knowledge. Teachers need to learn to present themselves in a manner that invites children to seek them out for appropriate kinds of help. This is a different type of teacher role from the traditional

one in which the child has little choice as to how he will relate to and utilize his teacher. When the teacher assumes a less authoritarian role, he shares his power with the children and provides the setting where peer-peer relationships are encouraged rather than discouraged. Teachers-to-be therefore need direct experiences in situations in which they have the option of retaining the power assigned to them or sharing it with children. They let others in on what is the responsibility of all.

Through the analysis of decision making and its relationship to nonverbal behavior, teachers can begin to gather insights into how best to handle free play or choice time which is such an integral part of programs for young children.

Cross-cultural Aspects. One way of providing opportunities for teachers to work more sensitively with children is to make it possible for teachers to work with persons from other cultures in teacher education programs. Teachers need the opportunity to look closely at persons both like and unlike themselves. Exposure to persons of different backgrounds may make possible at a superficial level the learning about persons different from themselves. A penetrating look at the nonverbal behavior of other persons may give more substantial insights.

The need for teachers to achieve competence in working with persons from other cultures is obvious and has been stressed by a number of recent authors. By taking an anthropological view or a stance which causes teachers to look carefully at others, whatever their origin and culture, teachers have the opportunity to gain understandings which should make their interpersonal contacts with others more effective.

So What?

The preceding pages represent the work of many persons over a period of a year. Two difficult topics--decision making and nonverbal communication--were explored in their interrelationships as they relate to young children. Obviously only the rudiments of these topics can be investigated when the population is the very young. Yet consider them we must if we are to gain important clues that will help us build worthwhile programs that assist the young in becoming competent, interdependent persons.

Emphasizing such areas as nonverbal behavior and decision making, at the present time, does not represent the mainstream of thought when it comes to developing curriculum at any level. But we must deal with such central issues if the school truly is to make a difference.

The questions of the researchers are many. The answers are few. The need is great for those interested in the young to get to the heart of human processes. This document represents such an attempt. It is offered with the intent that others will join in the search for more adequate ways to assist the young to observe more carefully, think more fully, feel more deeply--and decide more thoughtfully.

APPENDIX A

UNIVERSITY OF MARYLAND
NURSERY-KINDERGARTEN
FEBRUARY 1971

DIRECTIONS FOR REVIEWING LITERATURE RELATED TO NONVERBAL BEHAVIOR AND DECISION MAKING

Books, journals, and articles to be reviewed are housed in Room 107. In addition, there will be cards on references that could not be checked out from the library.

Ruth Spodak, Dorothy Young, and Mike Stephans have organized the materials for your use. Room 107 will be open mornings from 9:00 to 12:00 and all day Tuesday. One of the staff will be on hand to answer any questions and to notify you of available reading rooms.

The review of literature is to be completed by April 23.

Please focus your reading on the following categories.

Communication
- Definition
- Attempts at theories of communication
- Nonverbal behavior in human interaction
  - Components of nonverbal behavior (highly technical, minute analyses of behaviors such as raising and lowering the eyelid are not pertinent to this study. Instead, emphasis should be placed on nonverbal behaviors of gesture, facial expression, body movement, etc. as they operate in a context.)
- Relationship of nonverbal behavior to age, sex, cultural, and environmental factors
- Techniques for describing and analyzing nonverbal behavior in young children
- Nonverbal behavior in the classroom (Emphasis is on pupil behavior, but references to teacher nonverbal behavior as it relates to pupil nonverbal behavior would be appropriate)

Decision Making
- Understand and employing the decision-making process
- Facets of decision making
- Relationship of decision making to age, sex, cultural, and environmental factors
- Decision making in the classroom

Relationship of Nonverbal Behavior to Decision-making Behavior

REPORT FORMS

There are three forms for reporting what you have read. They are:

1. A pink form for reporting on research (a reference that describes procedure and reports statistical data is classified as research)

2. A green form for reporting on literature

3. A white page for summarizing in two or three sentences the substance of the work. (This annotation might possibly include comments on the author's unique approach to the topic, organization of the contents, strength of the work, comparison with similar works, etc.)

For each reference you read, please complete either a pink or green form and a white summary card. (Please do not use more than one green or one pink sheet for each reading.)

Consult Form and Style in Thesis Writing by William G. Campbell for footnote and bibliographical entries. A copy of this reference will be available in Room 107.

GREEN FORM

LITERATURE REPORT FORM

Reference (Be sure to include full data):

Literature review category:

Main idea(s):

Subordinate or supportive idea(s):

Relationship of material to other categories in literature review:

Personal reaction and/or evaluation:

Other references gained from reading:

PINK FORM

RESEARCH REPORT FORM

Reference (Be sure to include full data):

Literature review category:

Purpose of study:

Hypothesis or research questions:

Procedures:

Findings:

Conclusions:

Personal reaction interms of highlights of reading or value of source to project:

Other references gained from reading:

WHITE FORM

SUMMARY (ANNOTATION)

Reference (Be sure to include full data):

Literature Review Category:

APPENDIX B

NONVERBAL COMMUNICATION AND DECISION MAKING

Tally Sheet for Recording
Nonverbal Behaviors

Child _____
Observer _____
Date _____
Time _____

Key

H - Habitual
FE - Feeling Expression
FB - Focusing Behavior
P - Pause
SB - Seeking Behavior
IP - Initiating Behavior - Positive
IN - Initiating Behavior - Negative
TO - Task Oriented
W - Withdraw
MTP - Movement Toward People
RP - Responsive Behavior - Positive
RN - Responsive Behavior - Negative
C - Confusion

Category	Peer	Group	Teacher	Student Teacher	Task Completed Activity Time-5		Beginning Middle End

NONVERBAL COMMUNICATION AND DECISION MAKING

Directions for Tallying Nonverbal Behaviors

1. Record each behavior in sequence.

2. When time card is flipped, draw a short horizontal line under the last category reocrded and proceed.

3. Place a (✓) in appropriate column signifying whether the behavior was directed toward, in response to, or in cooperation with a peer, a group of children, the teacher, or the student teacher. If group is comprised of children and teacher and/or student teacher, check "group" column and other appropriate column.

4. In "Task Completed" column place a (✓) under Activity if child's behavior suggests he has completed task or a (✓) under Time-5 if he has stayed with the task for 5 minutes.

5. Label each behavior sequence in terms of its position on a non-intentional-intentional continuum. Use the following designations: B - beginning; M - middle; E - end.

Special Directions

a. The categories Feeling Expression (FE) and Pause (P) will always be considered "alone" so there will be no need to make a decision as to whom, etc. behavior was directed. (see direction #3 above.)

b. If a child is observed in a task-oriented behavior (TO), withdraws (W), and then goes back to the same task (TO) the sequence is recorded in the following manner:

TO
W
TO

The arrow indicated a return to the same task. If more than three activities intervene, do not use the arrow.

11/4/70

APPENDIX C

COLLEGE OF EDUCATION
UNIVERSITY OF MARYLAND
UNIVERSITY NURSERY-KINDERGARTEN

Fall, 1970 Research Project
Joan Moyer Room 201 F
Jessie Roderick Room 209
Telephone 454-2038
Ruth Spodak Room 107
Telephone 454-2341

NONVERBAL BEHAVIOR OF YOUNG CHILDREN AND ITS RELATIONSHIP TO DECISION-MAKING BEHAVIOR

The purpose of this investigation is to determine whether or not there exists any relationship between nonverbal behavior of children in the Nursery-Kindergarten and their decision-making behavior. To facilitate this, nonverbal behaviors will be identified and described and a category system for observing these behavior developed. The resulting instrument will be utilized in determining the relationship between nonverbel behavior and decision-making.

In addition to providing knowledge about decision-making behaviors of young children, it is hoped that the findings will aid teachers in becoming more aware of nonverbal cues children offer and in turn utilizing such knowledge in attempts to personalize and individualize the curriculum Questions such as those relating to the implications nonverbal cues have for guidance in decision making might also be clarified.

Design of the Study

The major steps in the study are:

I. Identify and describe nonverbal behaviors of children in the Nursery-Kindergarten unit.

Review related literature and research.

II. Develop a category system (observation schedule) for formally observing children's nonverbal behavior.

III. Describe decision-making behaviors.

IV. Discover any relationship between nonverbal behaviors and decision-making.

Step I in Nonverbal Behavior Project

Guidelines for observing and recording nonverbal communication in the Nursery-Kindergarten.

Purpose of Observations

Obtain a record of nonverbal communication of young children in the Nursery-Kindergarten unit. Observations should reveal patterns and/or recurring behaviors which can be utilized in building an observational schedule.

Definition of Nonverbal Behavior

Nonverbal behavior is simply communicating without words. It includes facial expressions, gesture and body movement, and vocal intonations and inflections.

(Galloway)

Directions for Recording Observations of Children's Nonverbal Communication (based on Galloway)

1. Describe total situation.
2. Focus on behavior of child.
3. Describe everything done by child that is an attempt to communicate.
4. Describe the communicative act as fully as possible.
5. Separate inferences from descriptions. Inferences may be enclosed in parentheses. Example: Jane kicked the blocks, cried, and ran from the block corner. (She seemed to be frustrated because she had difficulty building what she wanted to.)

6. Record descriptions in simple sentences.

Please note: If you have questions and/or reactions to your observations, please note them after you have completed the observation.

Interaction Situations to Aid in Focusing Observations

Child to Child: Child's response, overture, etc. to another child.

Child to Small Group: Child attempting to enter an on-going activity or withdrawing from it or giving directions to a group.

Child to Large Group: Discussion or information time--music time. Participation in activities, demonstrating for whole group.

Child to Inanimate Object: Blocks, trucks, paints, dolls, clothing (coat zipper, boots).

Child to Self: Solitary play, evidence of frustration and/or satisfaction with self.

Child to Space: Where child places self in room, playground. How much space is needed for activity? When does he move away from others?

Child to Teacher: Child's approach to teacher or child's responses to teacher's verbal and/or nonverbal behaviors.

Seeming lack of any nonverbal response or behavior.

Suggested times and activities for observing
(to be revised in terms of actual classroom schedules)

Situation A. (Free Play)

First 10 minutes
Middle 10 minutes
Last 10 minutes

B. Snack Time - observe full time

C. Story Time - full time

D. Music - full time

E. Transition Time - full time

F. Outdoor Time

First 10 minutes
Middle 10 minutes
Last 10 minutes

G. Discussion Time (science, health, social studies, etc.)

First 10 minutes
Middle 10 minutes
Last 10 minutes

Subjects

Five children from the three age groups in the Nursery-Kindergarten unit will be randomly selected for observation.

Observations

Observers will work in teams of two with each team covering one child for two full sessions (a.m.). The observations on each child need not be consecutive as long as each child is observed in every activity in the school program.

Some Examples of Nonverbal Behavior

smiling
pointing
raising eyebrows
stomping feet
pat on the back
touching another person
beckoning
nodding head
walking away from a group
shakes finger
opens eyes wide
eye contact
turns head away
walking towards a group, person, object
holding up an object
pouting - lips turned down
frowning - knitting eyebrows
waving
wiggling

Schedule

Week	
September 28	Orientation of observers
October 4 October 11	Step I - Identify and describe nonverbal behaviors by observing 5 children
October 25 October 28 November 1	Step II - Analyze observations obtained in Step I and derive a category system for observing nonverbal behavior
November 8 November 15 November 22	Step IV - Observe children by employing category system to discover relationship between nonverbal behavior and decision-making behavior

APPENDIX D

NONVERBAL COMMUNICATION AND DECISION MAKING

Revised
Tally Sheet for Recording
Nonverbal Behaviors

Child _____
Observer _____
Date _____
Time _____

H - Habitual
FE - Feeling Expression
FS - Focusing-Seeking Behavior
IP - Initiating Positive
IN - Initiating Negative
MTP - Movement Toward People
P - Pause
TO - Task Oriented
RP - Response Positive
RN - Response Negative
W - Withdraw
CJ - Cannot Judge

Activity	Category	Peer	Group	Teacher	Student Teacher	Task Completed Activity	Time-5	Beginning Middle End

NONVERBAL COMMUNICATION AND DECISION MAKING

Directions for Tallying Nonverbal Behaviors

1. In the left hand column labeled activity write the task or type activity in which the child is engaged, i.e. painting, blocks, slide. (This will always be recorded as a TO)

2. Record each behavior in sequence.

3. When time card is flipped, draw a short horizontal line under the last category recorded and proceed.

4. Place a (✓) in appropriate column signifying whether the behavior was directed toward, in response to, or in cooperation with a peer, a group of children, the teacher, or the student teacher. If group is comprised of children and teacher and/or student teacher, check "group" column and other appropriate columns. Record each interaction with others in the sequence in which it occurs.

   The categories Feeling Expression (FE) and Pause (P) will always be considered "alone" so there will be no need to make a decision as to whom, etc. behavior was directed. (See direction #3 above)

5. In "Task Completed" column place a (✓) under Activity if child's behavior suggests he has completed task or a (✓) under Time-5 if he has stayed with the task for 5 minutes.

6. Label each behavior sequence in terms of its position on a non-intentional-intentional continuum. Use the following designations: B - beginning; M - middle; E - end.

2/22/71

APPENDIX E

RELATION OF NONVERBAL BEHAVIOR CATEGORIES
TO DECISION-MAKING CONTINUUM BY FREQUENCY

Category	Decision Making			
	Beginning	Middle	End	Total
Habitual	13	56	4	73
Feeling Expression	21	74	4	99
Focusing Behavior	50	209	17	276
Pause	1	15	1	17
Seeking Behavior	63	150	12	225
Initiating Positive	14	59	13	86
Task Oriented	57	25	47	129
Withdraw	12	13	92	117
Movement Toward People	40	44	10	94
Response Positive	24	90	26	140

APPENDIX F

RELATION OF NONVERBAL BEHAVIOR CATEGORIES
TO THE DECISION-MAKING CONTINUUM
BASED ON PERCENTAGES AND FRENQUENCIES

Category	Decision-Making Continuum					
	Beginning		Middle		End	
	Percent	Frequency	Percent	Frequency	Percent	Frequency
Habitual	3	9	9	14	7	14
Feeling Expression	7	19	14	21	13	26
Focusing Seeking	21	56	28	42	17	31
Initiating Positive	4	10	7	10	7	13
Initiating Negative	7	20	4	6	4	8
Movement Toward People	14	36	5	8	7	14
Pause	1	3	1	2	-	1
Task Oriented	37	97	15	23	8	15
Responsive-Positive	4	11	12	18	11	20
Responsive-Negative	-	1	2	3	1	2
Withdraw	1	3	2	3	21	39
Cannot Judge	-	-	-	1	1	2
TOTAL	99	265	99	151	97	185

APPENDIX G

BRAINSTORMING SESSIONS ACCOMPANYING STUDY ON NONVERBAL BEHAVIOR OF YOUNG CHILDREN AS IT RELATES TO THEIR DECISION MAKING: IMPLICATIONS FOR CURRICULUM DEVELOPMENT AND TEACHER EDUCATION

BRAINSTORMING SESSION #1
April 9, 1971

Attending:

Barbara Fretz	Frances Midkiff	Tupper Webster
Betty Holden	Ed Morler	Louise Berman
Ed Holmes	Mary Bea Preston	Joan Moyer
Maureen Meehan	Jackie Vawter	

As background information for the beginning session participants were asked to read the draft of the pilot study, with the last chapter omitted. The focus of the assignment was to make recommendations and derive implications for further work.

Recommendations

The recommendations suggested encompassed the following areas: observation and tallying procedures, category system, training sessions. Each topic will be discussed separately.

Observation and Tallying Procedures. A team of observers for each child was deemed advisable rather than a single observer per child. The simultaneous use of a directed case study with the category system was suggested--one team member doing a directed case study at the same time another team member is coding with the category system. Pooling the information from both the checklist and the case study would increase the amount of data as well as contribute to more rigorous analysis of data. The directed case study could serve as back-up information for the check sheet.

Data could be analyzed more carefully if the interaction with peers were recorded as male or female, i.e.

Peer	
M	F

Continuous observations on the same child seem necessary, particularly in terms of recording beginning-middle-end aspects of decision making. The observation schedule should be arranged to include overlaps so as not to lose data.

Category System. Identifying beginning-middle-end aspects of a decision is the most difficult part of the coding process. The procedure needs clarification and possibly standardization.

There seems to be a need for some way to code movement other than withdrawal and movement toward people. There does not seem to be any way to categorize movement of a random type. Also, are there minor activities (used to fill time) which are not task oriented, and if so, how are these activities recorded?

Focusing Seeking Behavior denotes a category that is very broad. Might a separation between Focusing and Seeking Behavior be made, with a time element, i.e. eye contact for x seconds, introduced into the coding system facilitate the recording.

Might the category system be expanded to include motor development skills to differentiate overt decisions from automatic responses?

Training Sessions. Following the suggestion of using a team of observers, the training sessions should be set up to train a team, and have the team begin gathering data immediately, while another team is being trained. It seems that a time lapse between the training sessions and the actual data gathering cuts down on the efficiency of the observer. Also, a lapse of time between observations has the same effect. A concentrated training session, followed immediately by data gathering in the classroom on successive days is preferred. Observers felt they improved with practice, but in cases where there was a lapse of ten days between observations the likelihood of forgetting was great.

Using a team approach, reliability could be established within teams rather than within the total group of observers.

Implications

The implications suggested seemed to be concerned with curriculum and teacher education.

Curriculum. The sex differences observed in the decision-making process appear significant. The fact that boys make more decisions alone may indicate that there is less need for boys to work in groups, and maybe the teacher should not be as concerned in getting boys into groups, but rather concentrate on girls' tendency to group. Possibly this implies a greater need for equipment with which boys can work alone, and more boy-appropriate equipment and materials. One suggestion might be several block areas in various parts of the room rather than one large block area in the classroom.

Since peer influence appears greater than teacher influence in the classroom setting, is it due to the fact that the classrooms used in the study are more conducive to this? How can other classrooms be arranged to facilitate the stronger influence of peers? Is it possible to use this peer influence in setting up learning activities in the classroom?

Are teachers alert to children's behavior sufficiently to make decisions on that basis, i.e. does the teacher know whether a child wants to be left alone, or that a child wants help to enter an activity? Possibly the teacher's decision making may be more clearly related to the nonverbal behavior of children.

To what extent are children's decisions affected by directions from adults in the classroom? Is the teacher's idea of fun or standards for the child the same as the child's idea?

What is free play? Is it really free? Maybe we need to look at the free play time, and come up with a name that is more descriptive of what is happening during this period.

Teacher Education. Are undergraduate students and student teachers prepared for a process-oriented approach to curriculum? Are we preparing students to look at nonverbal behavior and take cues from that? How much are students aware of decision-making processes?

General Considerations

Several suggestions and concerns did not seem to apply to recommendations or implications, but were worthy of consideration for future planning and studies.

Is there a difference between accuracy and precision in replicating the study? How is bias of observers controlled, realizing that using human beings and studying human behavior denotes some degree of unreliability?

At this stage it is difficult to see the tie-in between nonverbal behavior and decision making. At the age level with which the study is concerned, loving may be more fundamental than decision making.

Nonverbal behavior at ages 3, 4, 5 seems comparable to the babbling stage of language development. At what stage does nonverbal behavior really communicate as far as the children are concerned?

Is there a point below which children cannot weigh alternatives, either due to psychological development or mental ability?

To what extent does a child's decision making involve calculative thinking? Adults generally do not intentionally do things to hurt others, but think about themselves first. Consequently, when a situation arises they try to get out of it gracefully, and therefore make calculative decisions. Is this also true of children?

Possibly the nonverbal behavior of the teachers needs to be coded to determine which nonverbal behaviors the children have imitated. Also, there is a need to look at the teacher's nonverbal behavior as it is interpreted by the children.

Is it feasible to observe the child in his home, and observe or interview parents to determine how they regard decision making, and how they are teaching their child to approach decision making?

It has been established that verbal skills of girls generally develop more rapidly than those of boys of the same age. This leads us to hypothesize:

Are the nonverbal skills of girls developing more rapidly than those of boys of the same age?

There is a need to look at the process of decision making, and possibly arrive at a more precise definition than the definition presently used in the study.

Brainstorming sessions will be continued on April 22 from 12:30-2:00 p.m. in Room 109. Topics for discussion are free play definitions, descriptions, and nomenclature; and decision-making definitions and guidelines.

Joan Moyer
Chairman

BRAINSTORMING SESSION #2
April 22, 1971

Attending:

Betty Holden	Frances Midhoff	Tupper Webster
Ed Holmes	Ed Morler	Louise Berman
Maureen Meehan	Jackie Vawter	Joan Moyer

The first topic for discussion was free play--definition and descriptions.

1. Free play is an opportunity for children to make choices providing alternatives are given. It is an opportunity for socialization with one's peers. There is structure in the sense that certain alternatives are provided and ground rules established preferably by the group. The individual child structures what he is learning. There is equal concern with cognitive and affective processes.

2. Free play is allowing a child to do his own thing--allowing a child freedom to discover his own sensory awareness and sensitivities. At present there is too much emphasis on adult-imposed structure--the adult decides what the child learns. May need to throw out old assumptions and begin with new ideas.

3. Free play is structuring the environment by providing materials from which a child can choose those things he is ready to learn. The teacher provides a setting, or puts into the environment materials and activities which are consistent with the child's pattern of learning. It is a provision of individual differences. It is the teacher's responsibility to observe the children and know at what level each child is functionsing so that materials and alternatives can be provided for the child to progress.

There is a need to develop in teachers an awareness of the situation so that they will not interfere in the free play environment unless absolutely necessary, and also develop in the children a sense of trust so that the teacher is not a threat in the free play situation. This is related to how teachers respond to people, either in an authoritarian role or in a people-to-people role. The teacher must become a keen observer and take cues for interaction from the children, but to some extent remain resourceful if there is an opportunity for her to contribute to the situation.

Free play is usually considered as a block of time in the program. Should it be? Might it not better be an entire morning so that children have opportunities for wider choices, for completing projects without interruption, for more opportunity to structure their own time?

What about multiage grouping in classrooms? Would this provide more opportunity for individualization and choices within the ability level of children?

A consideration of a new name for the free play time produced these suggestions--choice time, your time, environmental exploration, decision making.

Free play was considered in terms of its functions. The purposes of free play were identified as:

Exposing children to the environment which has been set up,

Providing an opportunity for a child to learn how to function in his environment,

Broadening a child's environment,

Providing an opportunity for a child to test his ideas within an environmental setting against people and things,

Producing a cognitive and affective setting; affective aspects are frequently missing from free play situations,

Further developing a child's self concept.

In reviewing free play as a teaching-learning experience, it was concluded that there is a difference between what is learned and what is taught. Until a child assimilates it, adapts it, lives with it, uses it in many ways, a thing is not learned. According to Shipman, the most important teaching that can be done is found in two areas:

1. Certain possibilities are opened up to the child which lead him to want to explore something. The learning takes place in the child's own interaction--with materials, with people, putting things together in his own mind utilizing his own previous experiences.

2. Much later, another form of teaching is valid--helping a child consolidate in some way some of the things he has learned. One way is by asking him questions to help him discover that things fit together.

If these two areas are considered on a continuum, teaching takes place at both ends, while learning runs through the entire spectrum. The largest part of the learning occurs within the child on the basis of his discoveries and interactions.

The next topic for discussion was decision making. The definition which has been used in the research projects for the past two years is a change in activity, or accepting or rejecting new direction.

A possibility might be an adaptation from Bruner in which he defines decision making as a mode of coping cognitively with a changing environment. Action and choice among alternatives are involved. This was questioned in terms of the cognitive dimension--Isn't it possible to make a decision on the basis of feelings?

Shackle goes the opposite route. He talks about the emotive and the affective, and unless you have a "cut" and a change of behavior, you don't have a creative decision. He differentiates between a cognitive decision and a creative decision. You don't have a creative decision until this "cut" aspect is present, in which case he feels you are operating more in the realm of the intuitive, but this has to enter into decision. He would account for impulse, too.

Cognitively you deal with alternative--you try to think them through. But in terms of the decision many of them are intuitive, and largely affective when you come right down to the moment of decision. You may think through rationally all the alternatives to a decision, but most decisions involve affective aspects.

Nonverbal behavior is part of decision making at this point. Nonverbal behavior is an indication of the affective aspects of decision making, as children move from one activity to another. Affective forces are part of any decision, but in much of the literature only the cognitive aspects are considered.

A definition of decision making may need to include initiating a decision and then being able to accept or reject it later. Decisions cannot really be ordered, and they may or may not be predictive. This is where the "cut" seems to fit. Of course, a differentiation must be made between management decisions and far-reaching decisions. Risk taking is part of the decision making process.

The next brainstorming session will be held on Thursday, April 29th at 12:30 p.m. At that time the discussion on decision making will continue, and implications for teacher education will be discussed.

Joan Moyer
Chairman

BRAINSTORMING SESSION #3
April 29, 1971

Attending:

Betty Holden	Frances Midkiff	Jackie Vawter
Ed Holmes	Ed Morler	Tupper Webster
Maureen Meehan	Mary Bea Preston	Joan Moyer

The session began with a discussion of risk taking as it applies to decision making. Society forces people to take risks. Decisions cannot be made unless risk is involved. Without risk, a mechanical process rather than decision making is involved.

It appears that children today are being given more opportunities to take risks and make decisions. Society has become more complex, technology has advnaced so rapidly that there is a gap between needs of society and how the structure copes with those needs. A change in patterns is being forced upon society, and children are beginning to have opportunities to develop decision making skills. More ideas are being generated and put into effect.

There is a proper time for certain things. However, it seems that as far as ideas are concerned, there is never the right time for a large percentage of the population. The idea may involve risk and inconvenience, and consequently, people reject it.

Alvin Toffler, author of Future Shock, suggests that the development of a future consciousness is needed. Schools deal with past events too much to look for answers today. Instead, schools should be dealing with current events and looking to future events. We need to develop the ability to take risks and not measure things in terms of the past, although there needs to be a balance between the past and present.

A Washington Post report of April 29, 1971 criticizes the Newman report on higher education by stating that what is needed is not more exposure of weaknesses, but specific programs based on sound perceptions of needs . . . The difficulty in teacher education seems to be in accepting weakness. Change cannot come about unless the need for change is accepted.

It is one thing to take risks, but at least there should be some evidence that what is involved in the risk taking process is known.

Implications for teacher education:

1. Teachers, at whatever level, need to know the underlying reasons for the things they do. Course work is often based on what has gone on before; changes in courses are woefully slow, and it is probably the teacher in the classroom, through the things she is doing, who is developing some reasons for why she does the things she does. There seems to be a dissonance between the university

and the schools. The university should be the place where ideas are disseminated for others to use, to develop and to deal with, but instead, ideas seem to be coming from the teachers.

2. Beginning students and teachers need to model, up to a point. However, most teachers reach a point where they no longer need to model, but can strike out on their own. The university doesn't seem to make a distinction here. Students are not given freedom to use skills and competencies as they want to use them.

3. An undergraduate program needs a certain amount of direction and prescription. However, at the graduate level a regimented, prescribed program of courses should not be required for everyone. Students should be permitted to choose courses which have meaning and might make a difference to them personally. Planners of teacher education programs should be willing to take the risks they expect pre-service and in-service teachers to take with young children. If a teacher has experienced this in her training she is much more apt to be able to allow children in her class to also experience it. Not much is known about the decision making process because even at the graduate level, adults are not permitted to make very many decisions.

   Then there is a difference between graduate and undergraduate students. An undergraduate student comes with the expectation of learning how to teach--to know how to teach children to learn. The problem is that we don't know how to teach. We may know how to learn to become a teacher, but the expectation of knowing how to teach is a fallacy.

4. Undergraduates should have the perception that they cannot be taught to teach. Rather, students should understand that they are being taught how to work with children, how to interact with children, given clues and ideas of what has been successful in the past. Students are graduating thinking that they have been taught how to teach.

   Undergraduates are not given enough practice in knowing children--What they are, how they learn, how they react. There should be more observation with guidance by professors. This requires a great deal of time--not merely a lecture course. The underlying issue is do we have to hold the hands of students merely because we've always done it--in high school, in elementary school, etc.

   Methods courses do not have any meaning until they have application in the classroom. Contrived and/or limited experiences may help, but they are not sufficient.

5. Course structure needs to be rearranged so there is immediate application in terms of the thinking involved. Unless there is immediate application with transferability to other areas, very little of the methodology is retained.

Students must be involved with face to face contact with children at some level, with graduated degrees of involvement, responsibility, and supervision. Students need more contact with children in a clinical setting.

A radical proposal would be not to allow students into a teacher education program until they have reached a level of maturity when they can "get it all together" by themselves. Students should never be "trained" to be a teacher. However, it may never be possible in a lifetime to "get it all together."

Practical experience at the beginning of a teacher education program--at the point of declaration--is essential. Until a student has an opportunity for practical experience to determine whether his interest in becoming a teacher is a reasonable prospect for the future he cannot "get himself together." It is a tremendous crisis to discover after four years of investment in a college that you are not together, and that you are being destroyed.

Maybe a counseling system is needed, where students have an opportunity to talk things out as to whether they really want to be a teacher, what is involved, what commitment is necessary.

Too many mindless decisions are made--we don't think through the consequences of things we are going to do in terms of the future. Almost two or three years of experience in a classroom are necessary to understand what it is you're doing in the classroom and the ramifications of what you do to children today and the effect it may have in future years. Maybe it is better for teachers not to do anything than to do something they don't understand.

Teachers cannot learn for children--they can only present materials and expect children to take what they can out of it. Preservice teachers need to be made aware of the fact that they cannot make children learn.

6. University people should be the source of ideas. At present, many of the university people are getting their ideas from the schools--they aren't able to deal with the teacher in the classroom.

   Teachers in the classroom are dealing directly with the problems of the classroom, but they don't have time to reflect on the problems. Seminars should be set up with teachers at the university during which these problems could be aired, and both teachers and professors could benefit from it.

   Videotaping should be used more often in methods courses. More professors should demonstrate teaching skills either live with children or via videotaping, and then analyze their teaching with the students.

   The university needs to determine what the goals of the university should be, the underlying assumptions. There may be a need for more than one program for preparation of teachers. Students should be free to choose which program they want to follow. Undergraduates as well as graduates should have some

background in research methodology after they understand the practical aspects of classroom participation. There should be no separation of research and teaching--people who have skills in both areas are needed. There should be research people in the public schools.

Teacher preparation programs to date have not provided the answers to the problems. Arts and Science graduates who go into teaching need both a background of content, and methods courses. More research is needed on the teacher preparation programs now in operation. Students need a sound background in content, but need methodology, preferably at the time they are participating actively in a classroom.

7. Teacher education programs should provide for involvement with children much earlier than college. Student teaching might well begin as a freshman, then again at the end of the program. There is not one magic method or approach to teacher education--different programs are needed for different people.

   Teacher education students should understand that teaching is a learning experience--if a teacher is not learning constantly, she is not setting the stage for children to learn. Teachers should continuously be learning how to deal with people.

Some thoughts on implications for teacher education:

1. Teachers do not address themselves to the problem of nonverbal communication. At present there is too much emphasis on the cognitive domain.

2. Teacher preparation programs should require courses in human interaction, or group dynamics, or communication skills.

3. Professor's roles need to be redefined--they need to share in other classes and need time to be in a guidance position.

4. Decision making should be encouraged in undergraduates--they should be allowed to make more decisions about what they are going to do, particularly in terms of programs.

Risk taking can happen only in an environment that encourages risks--an accepting, open atmosphere in which the student feels comfortable without realizing he is taking a risk.

The basic elements of a risk-taking environment include: (1) a small group of students with (2) a professor who listens rather than does most of the talking. Students are process rather than product-orieted, and grades are non existant. (3) Interest and commitment are involved, and students feel free to take risks. (4) Each student can contribute at his own level. (5) The opportunity is provided, motivation is present in the beginning but it goes beyond the feeling of "what's in it for me?"

Joan Moyer
Chairman